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OFFICIAL MEDICAL HISTORY OF THE WAR

MEDICAL SERVICES

GENERAL HISTORY, VOL. II.

CORRIGENDA

Page 13. 1st line. For the former *read* the latter. 2nd line from top. For the latter *read* the former. 15th line from bottom. For Thompson *read* Thomson. After the words to the latter, *add* When Colonel Thomson vacated the appointment in the Third Army he was succeeded by Colonel H. M. W. Gray, who had been acting as Consulting Surgeon at Rouen.

Page 492. Under Bowlby, for of base hospitals (Etaples) *read* for the front areas.

Page 502. Under Makins, for the front areas *read* base hospitals (Etaples).

Page 508. For Thompson, Col. H. A., *read* Thomson, Col. H. A.

0328
[Official history of the War:]

HISTORY OF THE GREAT WAR

BASED ON OFFICIAL DOCUMENTS

MEDICAL SERVICES. GENERAL HISTORY

VOL. II

THE MEDICAL SERVICES ON THE WESTERN FRONT, AND DURING THE OPERATIONS IN FRANCE AND BELGIUM IN 1914 AND 1915

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BY

MAJOR-GENERAL SIR W. G. MACPHERSON
K.C.M.G., C.B., LL.D.

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ABBREVIATIONS IN VOLUME II

A.D.G.	Assistant Director-General.
A.D.S.	Advanced Dressing Station.
A.D.G.M.S... ..	Assistant Director-General of Medical Services.
A.D.M.S.	Assistant Director of Medical Services.
A.D.R.T.	Assistant Director of Railway Transport
A.D.Tn.	Assistant Director of Transportation.
A.G.	Adjutant-General.
A.M.S.	Army Medical Service.
A.Q.M.G.	Assistant Quartermaster-General.
A.S.C.	Army Service Corps.
B.R.C.S.	British Red Cross Society.
C.A.M.C.	Canadian Army Medical Corps.
C.C.S.	Casualty Clearing Station.
C.P.	Collecting Post.
C.S.	Consulting Surgeon.
D.A. & Q.M.G. ..	Deputy Adjutant and Quartermaster-General.
D.A.D.M.S... ..	Deputy Assistant Director of Medical Services.
D.D.M.S.	Deputy Director of Medical Services.
D.D.G.	Deputy Director-General.
D.D.G.A.M.S. ..	Deputy Director-General, Army Medical Service.
D.D.G.M.S... ..	Deputy Director-General of Medical Services.
D.G.	Director-General.
D.G.A.M.S... ..	Director-General, Army Medical Service.
D.G.M.S.	Director-General of Medical Services.
D. of S.	Director of Supplies.
D. of T.	Director of Transport.
D.M.S.	Director of Medical Services.
D.R.T.	Director of Railway Transport.
D.Tn.	Director of Transportation.
E.M.O.	Embarkation Medical Officer.
F.A.	Field Ambulance.
G.H.Q.	General Headquarters.
G.O.C.	General Officer Commanding.
G.R.O.	General Routine Order.
G.S.O.	General Staff Officer.
I.G.C.	Inspector-General of Communications.
I.M.S.	Indian Medical Service.
I.S.M.D.	Indian Subordinate Medical Department.
K.O.S.B.	King's Own Scottish Borderers.
L. of C.	Lines of Communication.
M.A.C.	Motor Ambulance Convoy.
M.D.S.	Main Dressing Station.
M.O.	Medical Officer.
N.C.O.	Non-commissioned Officer.
O.C.	Officer Commanding.
O.R.	Other Ranks.
P.B.	Permanent Base.

ABBREVIATIONS IN VOLUME II

Q.A.I.M.N.S.	Queen Alexandra's Imperial Military Nursing Service.
Q.A.M.N.S.I.	Queen Alexandra's Military Nursing Service for India.
Q.M.	Quartermaster.
Q.M.A.A.C.	Queen Mary's Army Auxiliary Corps.
Q.M.G.	Quartermaster-General.
R.A.F.	Royal Air Force.
R.A.M.C.	Royal Army Medical Corps.
R.A.P.	Regimental Aid Post.
R.E.	Royal Engineers.
R.F.A.	Royal Field Artillery.
R.F.C.	Royal Flying Corps.
R.G.A.	Royal Garrison Artillery.
R.P.	Relay Post.
R.T.O.	Railway Transport Officer.
S.O.	Sanitary Officer.
T.A.T.	Temporary Ambulance Train.
T.F.N.S.	Territorial Force Nursing Service.
T.F.	Territorial Force.
U.S.A.	United States Army.
V.A.D.	Voluntary Aid Detachment.
W.A.A.C.	Women's Army Auxiliary Corps.
W.W.C.S.	Walking Wounded Collecting Station.
Y.M.C.A.	Young Men's Christian Association.

PREFACE

THE general scope of the series of volumes dealing with the Medical History of the War has been indicated in the Preface to the first volume of the General History of the Medical Services. Since the publication of this in December 1921 the volumes on the Diseases, Surgery and the Hygiene of the War and on Pathology have appeared; and the three remaining volumes of the General History have been prepared, although some time must elapse before all these are published.

The compilation of the volume on Statistics is being undertaken by the Ministry of Pensions, which is in possession of the necessary data.

The present volume, together with the greater part of the third volume of the General History, deals with the Medical Services of the British Expeditionary Force in France and Belgium. It has been compiled almost entirely from the war diaries of medical units, from the office files and diaries of the Administrative Medical Services, and from the official despatches; but as some of the war diaries are missing altogether and many fail to record facts which are of importance in compiling a history, several gaps have had to be filled from personal diaries and information obtained from various other sources. The war diaries are, in fact, of very unequal value. The most useful have been those which give sketch maps, details of the position and work of the medical units and changes in organization and policy, but these important details have been omitted in a considerable number of instances.

The campaign on the Western Front was characterized, so far as the Medical Services were concerned, by the unparalleled number of wounded who came under their charge. In compiling the history of the Medical Services of this front, it has on this account been considered desirable, after a more general description of the administrative services and the medical units, to present a detailed account of their strategical and tactical employment in the various battles and phases of the campaign.

The rapid collection and evacuation of the wounded were of paramount importance, and without carefully prepared schemes and organization, confusion and delay were inevitable, and the sufferings of the wounded would have been immeasurably increased. Consequently, in the chapters on the

work of the Medical Services during the battles on the Western Front, the importance of this feature of the employment of the Medical Services in war has been emphasized. It was that particular element which necessitated unbroken touch with the General Staff and continuous information as to the intentions of the commanders of formations, and which caused difficulty and failure when these were interrupted.

In the history of the Medical Services during the earlier operations on the Western Front the field medical units of divisions fill the picture to a much greater extent than in the later operations. In 1914 it was these small units and their movements that were most in evidence, as until the Expeditionary Force had been formed into armies with casualty clearing stations and motor ambulance convoys under their control, it was difficult to prepare or adhere to definite schemes for methodically receiving and evacuating sick and wounded. In the succeeding years the casualty clearing stations became the chief centres of the medical work with the field armies, and, when put to the practical test of war, fully justified their description in the Field Service Regulations as the pivot on which the whole system of collecting and evacuating sick and wounded turned. Consequently the chapters on the later battles emphasize more the strategical employment and work of these units than the tactical employment of the field ambulances, which were acting under divisional control along normal lines. It has been necessary also to concentrate attention on the medical units of the larger formations, as it would have been impossible otherwise to compress into the space available the details of the work of the smaller units, although the war diaries of the latter, forming an immense mass of documents, have all been consulted. Many of the divisional medical units have, however, prepared and published detailed accounts of their work and experiences in the war, and thus supplement to a considerable extent the information which is lacking in the General History of the Medical Services. Separate histories of the medical services of the Dominion Contingents are, it is understood, in course of preparation, and these, when they appear, will also serve to supplement the General History.

The history of the Medical Services would be incomplete without an acknowledgment of the immense help obtained from other branches of the Army, notably the Engineering, Ordnance, Transportation and Supply Services. The demands made on them, at times excessive and importunate, seldom failed to be met. The ready compliance with these demands was

an example of co-operation which was probably most in evidence during the campaign on the Western Front but was also a general experience in other theatres of war.

The work of the Voluntary Aid Societies, to which the Medical Services and the patients under their charge owe so much, is fully detailed in the Report of the Joint War Committee of the British Red Cross Society and Order of St. John, and special chapters on their work have consequently been excluded from this and the remaining volumes.

The sick and wounded are also greatly indebted to the Young Men's Christian Association, which opened recreation huts in connexion with hospitals and convalescent depôts at the base, and refreshment and rest stations at field ambulance posts and casualty clearing stations during periods of battle.

Questions of time and space have made it impossible to introduce into the history of the British Medical Services accounts of the medical organizations of the Allied Armies, although a description of these and of those of the enemy forces, comparing them with the British organization, would be of much interest and great instructive value.

The manuscript and proofs of the present volume and the remaining volumes of the General History have been read by Brig.-General J. E. Edmonds, the Director of the Historical Section, Military Branch, of the Committee of Imperial Defence, and the compiler is deeply indebted to him and to his staff for valuable assistance, criticism and advice. To his personal staff, who have co-operated with him throughout in preparing the volumes, the compiler is also greatly indebted.

The sketch maps have been prepared chiefly from maps and data in various war diaries and administrative files ; and some from maps kindly lent by the Historical Section, Military Branch, of the Committee of Imperial Defence. Those facing pages 202 and 243 are reproduced, with kind permission, from General Edmonds' first volume on the " Military Operations, France and Belgium, 1914."

The photographs have been obtained partly from official and partly from private sources. They serve to illustrate the conditions under which the field medical units were established.

It may be as well to note here that the work of the Medical Services on the Western Front, and, indeed, in all theatres of war, was carried out not only by the personnel of the permanent establishment of the Royal Army Medical Corps, which, except in the very earliest stages, formed but a small proportion of the officers and other ranks of the Army during

the war, but also by officers of the Territorial Force and temporarily commissioned officers who had been engaged before the war in civil practice. In fact at one time on the Western Front the proportion of regular R.A.M.C. officers was less than ten per cent. of the total number of medical officers serving with the Expeditionary Force. The work, too, of the consulting surgeons, physicians and other specialists, was carried out mainly by officers who were consultants or specialists in civil life. The details of their work may be gathered from the volumes already published on the Diseases and Surgery of the War and on Pathology, and also to a considerable extent from the volumes on the Hygiene of the War. Consequently this feature of the work of the Medical Services on the Western Front has not been recorded except in a more or less cursory manner in the volumes on the General History.

W. G. M.

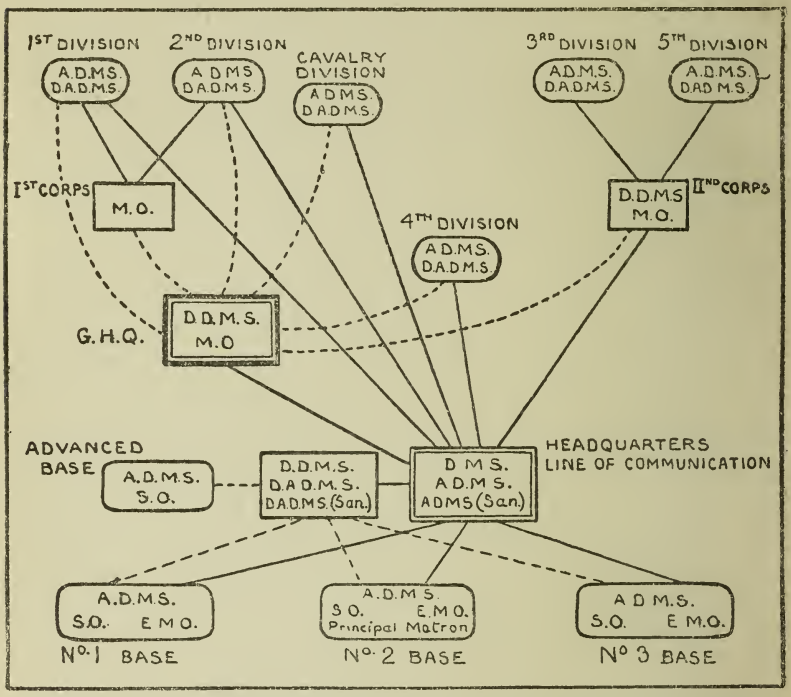
May 1923.

CHAPTER I.

ADMINISTRATION OF THE MEDICAL SERVICES ON THE WESTERN FRONT.

THE organization of the British Expeditionary Force which went to France in August 1914 and the medical services mobilized with it have been described in the chapter on Mobilization in the first volume of the General History of the Medical Services. It will be recalled that, according to the War Establishments and Mobilization Regulations published in 1914 before the war, the headquarters of administrative services in the field had no fixed or definite position, but were placed wherever the Commander-in-Chief considered most suitable. The war establishment of the headquarters of the medical services at the time consisted of a director of medical services, a deputy director, two assistant directors, one of whom was the assistant director for sanitary services, and two deputy assistant directors, one of these also being for sanitary services. It was understood that this establishment provided for the director and two assistant directors of medical services being attached to General Headquarters and the deputy and two deputy assistant directors to the headquarters of the lines of communication. But when the headquarters of the medical services took the field at the commencement of the operations in France none of its officers were attached to General Headquarters, and the Director of Medical Services, Surg.-General T. P. Woodhouse, was instructed to establish his office at the advanced base with the Inspector-General of Communications. The deputy director of medical services also had his office in the same locality. The inconvenience of this arrangement was immediately apparent, but Surg.-General Woodhouse, instead of moving his office to General Headquarters, which he could not very well do at the time, appointed, with the approval of the Adjutant-General, one of the deputy directors of medical services, Colonel T. J. O'Donnell, to represent him on the Adjutant-General's staff at General Headquarters. There was already at General Headquarters an officer, Major S. L. Cummins, in medical charge of the staff and headquarters' troops, and he at once acted as assistant to Colonel O'Donnell and shortly afterwards was graded a deputy assistant director of medical services.

No provision in the War Establishments of 1914 had been made for an administrative medical officer on the headquarters of a corps, but only for an officer in medical charge of the staff and corps troops; but, when the Ist and IInd Corps mobilized, a D.D.M.S. was appointed to each by the War Office. Colonel T. J. O'Donnell had proceeded to France in that capacity with the Ist Corps, but his position not being authorized, the Corps



Scheme of medical administration of the British Expeditionary Force, France, at the beginning of the War.

Commander removed him from his staff, and it was this fact that made him available when Surg.-General Woodhouse decided to appoint a representative at G.H.Q. The D.D.M.S. of the IInd Corps, however, Colonel R. Porter, remained with the Corps.

The medical services of each division and cavalry division were administered by an assistant director of medical services, with the rank of colonel. He commanded the Royal Army Medical Corps of the division, and belonged to the headquarters' staff of the division. He was assisted by a deputy assistant

director, who also acted as divisional sanitary officer and as officer in medical charge of the divisional staff. This administrative medical organization with divisions was retained throughout the war.

The medical services on the lines of communication were at first administered nominally by the deputy director of medical services, Colonel M. O'Keeffe, and his two deputy assistant directors. They were attached to the headquarters of the Inspector General of Communications ; but, as just noted, Colonel O'Keeffe's office and that of the director of medical services were practically together at the advanced base. The administrative medical services subordinate to him were those of four bases, Havre, Rouen, Boulogne, and the Advanced Base, each of which was provided with an assistant director of medical services, and a sanitary officer ; the A.Ds.M.S. of the sea bases also had a medical officer for embarkation duties on their staffs.

The nursing services were administered by a Principal Matron, Miss M. McCarthy, who was attached to the office of the D.D.M.S. of the lines of communication, but was for the time being stationed at Rouen, where the majority of the members of the nursing services were congregated.

It will thus be seen that the D.M.S. of the Expeditionary Force dealt with the A.Ds.M.S. of divisions and the D.D.M.S. of the IInd Corps either directly or through his D.D.M.S. at G.H.Q. ; while at the same time the D.D.M.S. at G.H.Q. was in a position also to deal direct with corps and divisional medical services through the Adjutant-General, independently of the D.M.S.

This system of administration was retained until the end of 1914, when the British Expeditionary Force was reorganized and formed into two armies, each composed of three army corps, but before this reorganization had taken place certain additions to, and modifications in the medical services were effected. The want of a D.D.M.S. in the Ist Corps was soon felt and the appointment of a D.D.M.S. to each corps was then definitely recognized. Colonel N. Ferguson was appointed D.D.M.S. of the Ist Corps in September 1914, and when the IIIrd Corps was formed at the end of August, Colonel O'Keeffe, who had been D.D.M.S. on the headquarters of the lines of communication, was appointed to it on the 19th September.

For some time afterwards the medical services on the headquarters of the lines of communication were then without a D.D.M.S., Surg.-General Woodhouse appointing an officer,

Lieut.-Colonel G. H. Barefoot, who had been A.D.M.S. of the advanced base, to replace Colonel O'Keeffe, but with the lower grade of an A.D.M.S. The D.M.S. also added to the staff of the D.D.M.S. G.H.Q., a D.A.D.M.S., Major A. L. A. Webb, for the supervision of railheads and the sanitation generally of front areas, as also an officer to supervise motor ambulance transport and the formation of motor ambulance convoys.

When an Indian contingent was being sent to France in October 1914, with Marseilles as its base and Orleans as its advanced base, a southern line of communications was formed with an A.D.M.S. and two D.A.Ds.M.S., one for sanitation, at Marseilles and with a sanitary officer at Orleans. The administrative area of the A.D.M.S. of this southern line of communication then extended from Marseilles to Orleans, and that of Lieut.-Colonel Barefoot from railheads to the bases other than those on the southern line. But, in a memorandum issued by the D.M.S. on the 6th October 1914, the A.Ds.M.S. of the sea bases were to act directly under instructions of the D.M.S.; only the A.D.M.S. of the advanced base acting under the instructions of the A.D.M.S. L. of C. This was scarcely a logical position in which to place the head of the medical services on the lines of communication, but is probably explained by the fact that he was graded only as an A.D.M.S. and not as a D.D.M.S. Its effect was to throw on the D.M.S. to a very great extent the direct administration of the medical services in the lines of communication area, thus divorcing him still further from their general administration at G.H.Q. The administration of the medical services at G.H.Q. consequently fell practically into the hands of the Adjutant-General, assisted by a deputy director and deputy assistant director of medical services. The position of the D.M.S. thus became one of comparative isolation, as he did not regard himself as attached to the headquarters of the Inspector-General of Communications. He was represented in an administrative capacity both at G.H.Q. and on the headquarters of the L. of C., while he himself and his office were attached to neither. The situation was not one which was conducive to smooth administration. It was still further complicated by the arrival in France of Sir Arthur Sloggett, the Director-General of the Army Medical Service, whose services were placed at the disposal of the Commander-in-Chief by the Secretary of State for War, towards the end of October 1914. Although Sir Arthur Sloggett did not then assume the duties and responsibilities of directing the medical services of the expeditionary force as a whole, his presence in France at

the time overshadowed Surg.-General Woodhouse's administration, and it was obvious that a general reorganization of administrative duties and responsibilities could no longer be delayed.

On 6th November 1914 the appointment of D.D.M.S. L. of C. was revived to include the medical services in the whole of the L. of C. area, and at the end of the year a complete reorganization of the administrative medical services was effected with the Director-General as the responsible head at G.H.Q.

The new organization was promulgated in a circular memorandum by the D.G.M.S. dated the 17th January 1915. At the end of 1914, the British forces had been organized in two armies, and a director of medical services had been appointed to each. Surg.-General W. G. Macpherson, who had joined the expeditionary force from the War Office in the middle of October and had been acting as adviser for medical services of the Indian Contingent, was appointed D.M.S. of the First Army, and Colonel R. Porter, promoted to the rank of Surg.-General, to the Second Army. Colonel T. J. O'Donnell was also promoted to the rank of Surg.-General and was graded at first as a D.M.S. at G.H.Q. for front areas, but shortly afterwards as deputy director-general. Surg.-General T. P. Woodhouse ceased to be D.M.S. of the force, and became D.M.S. of the lines of communication at the headquarters of the Inspector-General. His office and that of the D.D.M.S. L. of C. were then amalgamated and his responsibilities included the control of all medical services on the lines of communication, including the Marseilles base and southern line. The grade of the administrative medical officers of the Boulogne and Rouen bases was raised to that of D.D.M.S., and A.Ds.M.S. were appointed to several new bases which had been opened or were being opened, such as those at Etaples, Calais and Le Treport.

At this time G.H.Q. and the D.G.M.S. office were at St. Omer and the headquarters of the Inspector-General of Communications with the D.M.S. L. of C. and his office at the advanced base, Abbeville. The duties of the D.G.M.S. included the supervision and co-ordination of the medical services generally and he also controlled the work of voluntary aid organizations as Chief Commissioner to the Joint War Committee of the British Red Cross Society and Order of St. John of Jerusalem. His staff at St. Omer consisted of a deputy director-general, an assistant director-general, an A.D.M.S., a D.A.D.M.S., a staff officer, a medical inspector of drafts, an officer in charge

of ambulance transport, and a D.A.D.M.S. for railheads. The D.D.G.M.S. represented him during his absence from G.H.Q., co-ordinated, with the assistance of the D.A.D.M.S., the work of evacuation of sick and wounded from army areas to the lines of communication, and also carried out inspections of front areas on behalf of the D.G.M.S. The A.D.G.M.S. was the personal assistant of the D.G.M.S. The A.D.M.S. was employed in charge of the personnel for medical services, and the staff officer was at the disposal of the D.G.M.S. for any services he might be called upon to perform. A quartermaster of the R.A.M.C. was head of the clerical establishment and responsible for the registration and charge of documents. He also acted as secretary to the D.G.M.S. in the latter's capacity as Chief Commissioner of Voluntary Aid Organizations. The appointment of an officer in charge of ambulance transport was subsequently abandoned, and a D.A.D.M.S., afterwards an A.D.M.S. for ambulance trains or transport, was definitely appointed to the staff of the D.M.S. L. of C.

When the number of the armies was increased and the line held by the British extended from the Ypres Salient to the Somme, G.H.Q. was moved at the end of March 1916 from St. Omer to a more central position. It moved in two echelons, the first echelon going to Montreuil and the second to Hesdin. The D.G.M.S. office was then split up, a proportion of the administrative medical staff accompanying the Adjutant-General to Montreuil, while the D.G.M.S. and his office were established at Hesdin. The Adjutant-General had arranged for the deputy director-general, a D.A.D.M.S., and the D.A.D.M.S. for railheads to be attached to his office ; while the D.G.M.S., the A.D.G., the A.D.M.S., staff officer, medical inspector of drafts, quartermaster and the clerical staff went to Hesdin. Shortly after this move had taken place, however, the D.D.G., Surg.-General T. J. O'Donnell, was appointed D.M.S. in India, and his place was taken by Surg.-General W. G. Macpherson, who had been recalled from Salonika at the request of the Commander-in-Chief, for special duty in connexion with the impending operations on the Somme. These duties involved constant supervision of the medical arrangements in the front areas, and as Hesdin was nearer the army areas than Montreuil, Surg.-General Macpherson made his headquarters with the D.G.M.S. there, and the A.D.G., Colonel C. Burtchaell, then took his place in the Adjutant-General's office at Montreuil, together with the medical inspector of drafts. The appointment of a D.A.D.M.S. railheads at G.H.Q. was then abolished.

This separation of the D.G.M.S. establishment into two echelons at a considerable distance from one another brought about, although in a lesser degree, some of the inconvenience that was felt in the earlier stages of the war when the D.M.S. of the force was isolated from G.H.Q. and represented on it by a D.D.M.S. Correspondence between the D.G.M.S. office and other branches of the G.H.Q. staff had to be brought to the A.G. by the A.D.G.M.S. and returned by the same channel. Had the office of the D.G.M.S. been at or near Montreuil with the rest of the G.H.Q. staff he would have been in a position to deal with medical questions affecting the A.G., Q.M.G., or General Staff in a more direct manner and without this cumbrous circulation of documents. There were also occasions when there was delay in obtaining important decisions in consequence of papers from the D.G.M.S. office being held up at Montreuil. There was also some waste of power by this arrangement, as the A.G.'s office absorbed the A.D.G., a D.A.D.M.S., and three clerks of the R.A.M.C., whose main duty was to receive papers from the D.G.'s office, bring them to the A.G., and return them with the latter's decisions. There was thus a duplication of office work, which could have been avoided had the D.G.'s office and establishment been kept together as had been the case at St. Omer.

It became necessary, therefore, to add to the D.G.M.S. staff officers to replace those employed at Montreuil, as the work was in no way diminished by the echelon there. Consequently two D.A.Ds.M.S. were appointed, one of them being Major R. B. Black, who had acted as the D.G.'s staff officer at St. Omer.

The work in the D.G.'s office was then regulated. The D.D.G. acted for the D.G.M.S. during the latter's absence, directed the policy of the medical services as approved by the D.G.M.S., and was specially entrusted with the strategical employment of the medical services and the inspection of medical arrangements for battle. The A.D.M.S. dealt with the personnel of the medical services, one of the D.A.Ds.M.S. with the medical and surgical stores and equipment, and the other as assistant to the D.D.G. in connexion with the military operations. The A.D.G.M.S. assisted the A.G. in connexion with medical questions, especially those relating to manpower and discipline, being himself assisted by a D.A.D.M.S., and the Medical Inspector of Drafts. The A.D.M.S. for Sanitation, Lieut.-Colonel Beveridge, and the Adviser in

Pathology, Colonel Sir W. Leishman, had their headquarters in the office of the D.M.S., L. of C., but were regarded as attached to the D.G.M.S. staff.

No change was made in the medical administration of divisions during the war, but, when Ds.M.S. were appointed to the headquarters of armies at the end of 1914, the appointment of D.Ds.M.S. to corps headquarters was abolished, except in the case of the Cavalry Corps, to which D.Ds.M.S. and D.A.Ds.M.S. had been appointed from the time of their formation. It was restored again in April 1915 after the battle of Neuve Chapelle. Up till then A.Ds.M.S. of divisions came directly under the administration of the Ds.M.S. of armies, the only medical officer at corps headquarters being the officer in medical charge of the corps headquarters' staff. At that time there were not more than six divisions in an army, so that their medical administration was comparatively easy without the intervention of a D.D.M.S. at the headquarters of the corps to which they belonged. When D.Ds.M.S. were restored to corps, the officers in medical charge of the staff became their assistants with the grade of D.A.D.M.S. The D.Ds.M.S. of the Cavalry and Indian Cavalry Corps were independent of the armies and came under the direct administration of the D.G.M.S. at G.H.Q.

The Ds.M.S. of armies were responsible for the whole of the medical services in the army areas, and had direct control over the medical units of the army other than the field ambulances of divisions, which were administered by the divisional A.Ds.M.S., and the medical and sanitary services at railheads, the control of which, as already noted, was exercised by the D.A.D.M.S. Railheads under the D.D.G.M.S. at G.H.Q., and afterwards by the D.M.S. L. of C., and the A.D.M.S. for Sanitation.

The administrative medical services at the headquarters of the lines of communication at the time of the reorganization of the medical services under the D.G.M.S. consisted of the D.M.S., a D.D.M.S., and two D.A.Ds.M.S., but associated with the D.M.S. were the A.D.M.S. for Sanitation, the Adviser in Pathology, and the Principal Matron. The D.D.M.S. continued to act as representative of the D.M.S. at the headquarters of the Inspector-General of Communications, as the responsibilities of the D.M.S. required his frequent absence on inspection duties at the various bases and hospitals. One of his D.A.Ds.M.S. was in general administrative charge of the personnel for medical services and the other of ambulance

trains and evacuation. The A.D.M.S. for Sanitation and the Adviser in Pathology, as already noted, were nominally officers of the D.G.M.S. staff, but for convenience were attached to the office of the D.M.S., L. of C. The former dealt with all sanitary questions both in front areas and on the L. of C., the latter dealt with all questions relating to preventive inoculations, and to bacteriological and pathological work throughout the British forces.

The office of the D.M.S. L. of C., remained at Abbeville until the end of the war. Additions were being made to the establishment from time to time. The A.D.M.S. Sanitation was given a D.A.D.M.S., and a medical officer was appointed to assist the Adviser in Pathology. The D.A.D.M.S. Ambulance Trains became an A.D.M.S., with a D.A.D.M.S. to assist him. The officer in charge of personnel was raised to the grade of A.D.M.S., and a D.A.D.M.S. for general duties and an officer in charge of statistics were added to the establishment. The Principal Matron was graded as Matron-in-Chief, with a matron and sister on her staff. Finally, in August 1917, a quartermaster, R.A.M.C., was appointed to the staff of the D.M.S. L. of C., for charge of a medical stores' branch of administration.

The lines of communication and bases were divided geographically into several administrative areas with an administrative medical staff in each. The latter consisted at Rouen, Boulogne and Etaples of a D.D.M.S., a D.A.D.M.S., a Sanitary Officer, and an Embarkation Medical Officer; at Havre, Marseilles and Calais of an A.D.M.S., a D.A.D.M.S., a Sanitary Officer, and an Embarkation Medical Officer. At Le Treport, which included Dieppe, there were an A.D.M.S., Sanitary Officer and Embarkation Medical Officer; at Paris an A.D.M.S. and D.A.D.M.S.; at Abbeville and at St. Omer an A.D.M.S. and Sanitary Officer. St. Omer had become a L. of C. area on the removal of G.H.Q. to Montreuil. In addition to these, a certain number of areas, in which there were no important hospital centres, were in the administrative medical charge of a senior medical officer.

One area, Trouville, became a hospital centre in the latter part of 1917, but its administration differed from that of all other areas on the L. of C., the administrative medical officer, Surg.-General S. Hickson, being appointed to command all the troops in the area as well as to administer the medical services. He was given a special staff to assist him in A.G. and Q.M.G.'s duties.

In May 1917, when it became necessary to establish a line of communication through Italy and France in connexion with the operations in Macedonia, special appointments had to be made for the administration of its medical and sanitary services, and consequently, in October 1917, Colonel Statham was appointed A.D.M.S., afterwards D.D.M.S., of what was designated the Mediterranean line of communication, with its southern base at Taranto, in Italy, and its northern base at Cherbourg. He was assisted by two D.A.Ds.M.S., one at St. Germain au Mont d'Or, near Lyons, for the French section of the line, and one at Faenza, in Italy, for the Italian section. Colonel Statham continued to administer the whole of this line until a British force was sent to Italy in November 1917. Colonel Statham was then appointed A.D.M.S. Paris, an area which included the French section of the Mediterranean line of communication and all those parts of France which did not come into any other British administrative area, but in which British services were employed. The D.A.D.M.S. at St. Germain was appointed to assist him in Paris. The whole of this line was placed directly under War Office administration on 8th August 1917 until its separation into an Italian and a French section under the D.M.S. of the British force in Italy and the D.G.M.S. of the British armies in France respectively.

An Independent Air Force occupied an area in France in the neighbourhood of Nancy from May 1918 onwards. Its administration was separate from that of the British armies in the field, but its medical services were obtained from R.A.M.C. units and personnel, and were administered by an A.D.M.S. attached for the purpose to the Royal Air Force. He was assisted by a D.A.D.M.S., and was responsible to the Major-General commanding the Royal Air Force in the field. But previous to this, when the R.A.M.C. personnel employed with Air Force units came under the administration of the Air Ministry on 1st April 1918, the medical officer at the headquarters of the Air Force in the field was placed in administrative medical charge. He was in close touch with the D.G.M.S., whose office was at no great distance from the Royal Air Force headquarters.

A senior medical officer, Lieut.-Colonel Dale Logan, was appointed to the staff of the Inspector of Mines for administrative duties in connexion with the tunnelling companies.

The Dominion, Indian and Labour Contingents had no separate medical administration at G.H.Q. in France until 1918, when, at the end of August, Colonel A. E. Ross was

attached as a D.M.S., with the rank of Brig.-General, to the staff of the Canadian section at G.H.Q. He had been D.D.M.S. of the Canadian Corps in the field at the time of his transfer to G.H.Q. The general administration of the Canadian Contingent medical personnel, however, was in the hands of the D.G. of the Canadian Medical Services on the headquarters of the Contingent in London. The Australian Contingent medical personnel in France was administered directly by a D.M.S., Surg.-General, afterwards Major-General, Sir Neville Howse, on the headquarters of the Australian Contingent in London, and the New Zealand medical personnel by a D.D.M.S. on the headquarters of the New Zealand Contingent, also in London. Colonel P. G. Stock, who was in command of the South African General Hospital at Abbeville, combined this command in May 1918 with administrative duties as D.D.M.S. of the South African Contingent and Labour Corps. These officers, however, had no administrative control in France, except through the D.G.M.S. The Indian Contingent had no special administrative medical staff beyond the A.Ds.M.S. of divisions and corps ; but Lieut.-Colonel J. B. Jameson, I.M.S., was appointed to advise on medical questions connected with the Indian Labour Corps. He was attached to the staff of Lieut.-General Locke-Elliott, the adviser on technical matters for Indian troops.

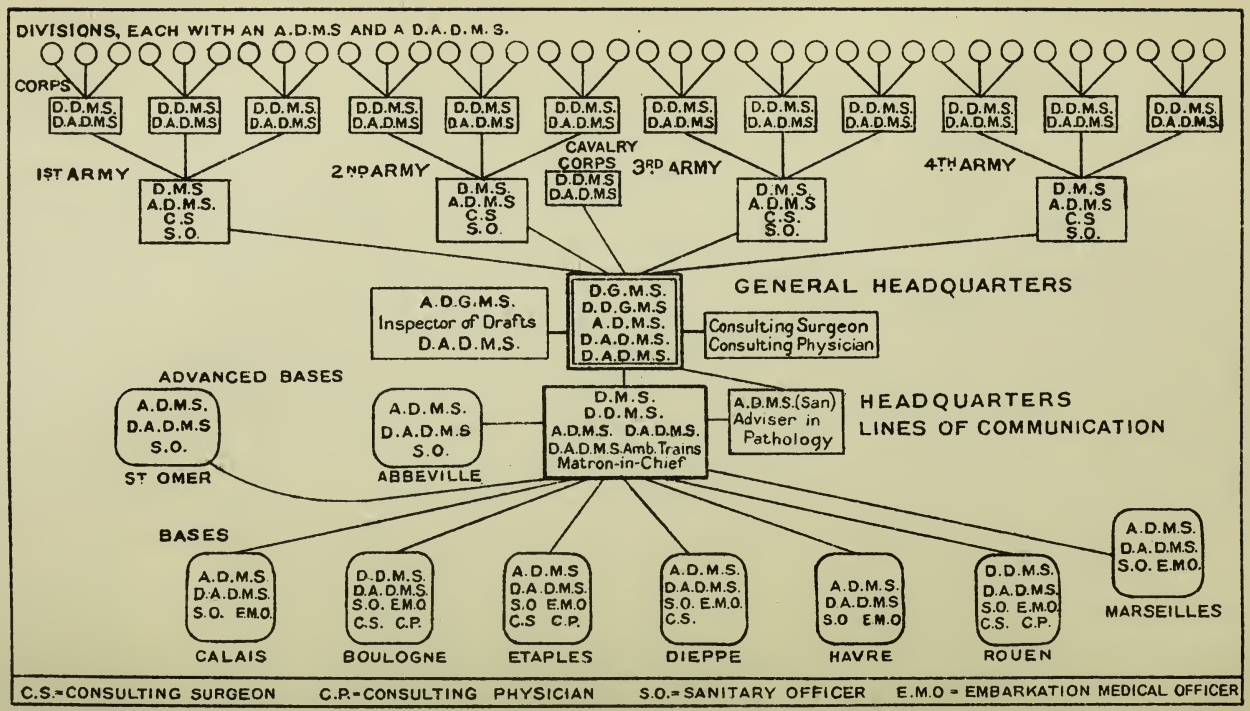
Liaison was maintained with allied forces through their representatives at G.H.Q., but in 1914, when many British sick and wounded were admitted into French hospitals in various parts of France, an officer of the R.A.M.C., Major Forrest, was appointed to the French G.H.Q. in order to trace them and arrange for their transfer to British hospitals. Subsequently liaison was maintained by medical officers from the French G.H.Q. periodically visiting the D.G.M.S., and from 1916 onwards by the D.D.G.M.S. visiting French G.H.Q. and maintaining touch with the officer holding a similar appointment there. There was the closest co-operation between them in the exchange of information on all matters bearing on medical and sanitary administration. Liaison with the Portuguese and American divisions attached to British armies in the field was maintained through the administrative medical services of the corps to which they belonged and through their liaison officers at G.H.Q.

There were few changes in the officers appointed to the higher administrative positions at G.H.Q., headquarters of armies, and the headquarters of the L. of C. until the end of 1917, but

the A.Ds.M.S. of divisions and of corps in the field and their D.A.Ds.M.S. were frequently changed, owing chiefly to losses by battle or sickness, but also to the withdrawal of administrative medical officers for service in the United Kingdom or in other theatres of war. Towards the end of 1917, however, the Army Council decided to place on the retired list officers who had reached the age for compulsory retirement. This decision led to the retirement of Surg.-General Woodhouse from the appointment of D.M.S. L. of C., in December 1917, and of Surg.-General R. Porter from that of D.M.S. of the Second Army in January 1918. Surg.-General H. Carr, who had been D.D.M.S. of the Etaples Base since its formation, succeeded the former, and Surg.-General Guise Moores the latter. The rank of Surg.-General was altered to that of Major-General in March 1918. At the same time the rank of the D.G.M.S. became Lieut.-General. In 1917 the A.D.G.M.S., Colonel C. Burtchaell, had been given the temporary rank of Surg.-General and later Major-General, in connexion with the special duties relating to the expediting of the return of men to the ranks from hospitals and convalescent depots at a time when man-power was causing considerable anxiety.

The D.G.M.S., Sir Arthur Sloggett, had reached the age limit for retirement in November 1917, but although serving in France, he held the appointment of Director-General of the Army Medical Service, and as this was a four year appointment irrespective of age, he was not compulsorily retired until the termination of his appointment on the 1st June 1918. The D.D.G.M.S., Major-General Sir W. G. Macpherson, had reached the age limit at the end of January 1918, but sanction was given for his continuing to serve as D.D.G. until the termination of Sir A. Sloggett's term of office. Consequently at the beginning of June both the D.G.M.S. and D.D.G.M.S. appointments became vacant. Major-General C. Burtchaell was then appointed by the Army Council to be D.G.M.S. with the rank of Lieut.-General, and Major-General J. Thomson, who had been D.D.M.S. of the Eastern Command at home, became D.D.G.M.S. They continued in these appointments to the end of the war.

Consulting surgeons and physicians and consultants in special subjects were not graded as administrative officers but held important positions on the staffs of administrative medical officers in the armies, at the principal hospital bases and at G.H.Q. The first to arrive in France were Sir George Makins and Sir Anthony Bowlby, who came out in September 1914,



SCHEME OF MEDICAL ADMINISTRATION OF A FORCE OF FOUR ARMIES OF THREE CORPS EACH, WITH SEA BASES AND ADVANCED BASES. THIS WAS THE GENERAL PLAN OF ADMINISTRATIVE MEDICAL ORGANIZATION OF THE BRITISH FORCES IN FRANCE AFTER THE FORMATION OF FOUR ARMIES IN 1916.

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the former being appointed Consulting Surgeon for the front areas, with his headquarters at G.H.Q., and the latter Consulting Surgeon of the base hospitals, with his headquarters eventually at Etaples. They were followed by Colonel F. F. Burghard and Colonel Moynihan, who were appointed Consulting Surgeons at Boulogne and Rouen respectively, and by three consulting physicians in October and November 1914. Sir Wilmot Herringham was appointed to G.H.Q. as Consulting Physician for front area work, Sir Bertrand Dawson to the Boulogne base, and Sir J. Rose Bradford to Rouen and eventually to Etaples. Sir Almroth Wright and Colonel W. T. Lister also arrived in Boulogne in 1914, the former in October on special duty in connexion with bacteriological investigations into wound infections, establishing his laboratory at No. 13 General Hospital, Boulogne, and the latter in November as Consulting Ophthalmologist. Colonel Sir William Leishman, the Adviser in Pathology, arrived on 4th October 1914, and, as already noted, was attached to the staff of the D.M.S.

Subsequently consulting surgeons and physicians were appointed to all the principal hospital centres, and eventually to the staffs of the Ds.M.S. of armies in the field. Colonel C. S. Wallace joined the staff of the D.M.S., First Army, on 1st May 1915, but no consulting surgeon was with the D.M.S., Second Army, until April 1916, when Colonel H. M. Rigby was appointed. Until then Sir Anthony Bowlby carried out the duties from G.H.Q. When the Third Army was formed in June 1915, and the Fourth Army in April 1916, Colonel H. A. Thompson was appointed Consulting Surgeon to the former, and Colonel T. Sinclair to the latter. The Fifth Army, formed in July 1916, was without a consulting surgeon until the end of August of that year, when Colonel S. Maynard Smith was appointed. The bases to which consulting surgeons were appointed were Boulogne, Etaples, Rouen, Le Treport, and, in 1917, Havre and St. Omer.

Consulting physicians were not appointed to armies until 1916, when Colonel J. Galloway was appointed Consulting Physician to the First and Second Armies, while Sir Wilmot Herringham continued to act from G.H.Q. as Consultant to the other armies. In December 1916 Colonel A. B. Soltau succeeded Colonel J. Galloway, but no separate consulting physician was attached to other armies until December 1917, when Colonel J. A. Nixon was appointed to act as such for the Fourth and Fifth Armies. A consulting physician

was not appointed to the staff of the D.M.S., Third Army, at any time, as Sir Wilmot Herringham continued to carry out the duties from G.H.Q.

The consulting surgeons and physicians interchanged from time to time with those in the United Kingdom, or were transferred to other appointments and replaced by officers, specially qualified for the duties, who were serving with medical units in the field or on the lines of communication. Most of them were officers of the Territorial Force, R.A.M.C., and on appointment were given the temporary rank of Colonel. Sir George Makins, Sir Anthony Bowlby, Sir Cuthbert Wallace, Sir J. Rose Bradford, Sir B. Dawson and Sir W. Herringham were promoted to the rank of Surg.-General, subsequently Major-General, in recognition of their long and valuable service as consulting surgeons and physicians in the field.

In addition to these consultants, appointments were made in France of a Consulting Neurologist, Consulting Psychologist, Consulting Dermatologist and Consulting Radiographer. They were attached to the Boulogne and Etaples bases, but were available for duty in army areas.

In this brief account of the administrative medical services on the western front only names of those holding the chief administrative or consultant appointments have been mentioned.

CHAPTER II.

THE MEDICAL UNITS IN ARMY AREAS.

THE collection, evacuation and treatment of sick and wounded depended on a regimental medical service, field ambulances with divisions, casualty clearing stations and motor ambulance convoys with armies, ambulance trains running between armies and hospitals on the lines of communication and between these and hospitals at sea bases or hospital ships, ambulance flotillas organized for similar work on canals, large hospitals of the stationary or general hospital type, and convalescent depôts. There were also a few hospitals established by voluntary organizations.

In addition to the units for care of the sick and wounded, mobile laboratories were employed in army areas. There were four types of these, namely for hygiene, bacteriology, radiography and dentistry.

For the supply of medical and surgical stores there were base depôts of medical stores at bases, and advanced depôts in army areas. The supply of hospital equipment was not under the control of the administrative medical services but under that of the Director of Ordnance. Similarly, the supply of food and medical comforts was under the control of the Director of Supplies ; but the medical services received valuable assistance both in equipment and supplies, adding to the comfort of hospitals and medical units, from depôts maintained at the base and in army areas by the Joint Committee of the British Red Cross Society and Order of St. John.

For sanitary services there were sanitary sections for work in army areas and in the areas of the lines of communication, and sanitary squads for duties at railheads and in some of the towns.

The strategical and tactical employment of the units employed in collecting and evacuating the sick and wounded is illustrated in the chapters dealing with the medical services during the various battles and phases of the operations. But a general review of the methods evolved and the experience gained may prove useful as an introduction to these chapters.

The regimental medical service and the field ambulances formed the first and second line of medical and surgical aid

and were under divisional control, moving with their divisions at all times, that is to say, when a division moved from one sector of the front to another, or from one corps to another, or from one army to another, these medical services and units accompanied it. The sanitary sections in army areas were also divisional medical units at first and moved with their divisions until early in 1917, when they were employed as extra divisional troops and detached from divisional control.

The casualty clearing stations and motor ambulance convoys, as well as the mobile laboratories and advanced depôts of medical stores were under the control of the Ds.M.S. of the armies to which they were allotted.

The ambulance trains and flotillas were generally administered by the D.M.S. of the L. of C., but their running was regulated by the Director of Railway Transport and Inland Water Transport.

The hospital ships were administered from the United Kingdom.*

All other medical units were under the control of the D.M.S., L. of C., or his representatives in L. of C. administrative areas, except such as were employed with G.H.Q. troops, which came directly under the D.G.M.S. But a few of the stationary hospitals were after a time placed in army areas, and these then came under the control of the D.M.S. of the army concerned.

The Regimental Medical Service.

When a battalion occupied a front line, a regimental aid post was established by its medical officer in a shelter or dugout capable of accommodating twenty to thirty wounded at a time. In the earlier stages, however, cottages or other buildings and their cellars proved useful for regimental aid post purposes; while, during rapid advances or retreat, sunken roads and embankments provided such shelter as they could afford from enemy fire. The equipment of a regimental aid post consisted, especially in the later stages of the war, of a supply of stretchers and blankets, means of heating food and water, a number of Thomas' splints, usually ten, and shell dressings, in addition to the regulation medical and surgical equipment of a battalion. The original number of stretchers was eight. In July 1918 two more were added; but a number of extra stretchers and blankets would be brought up to a regimental

* See Vol. I, General History Medical Services, p. 109 *et seq.*

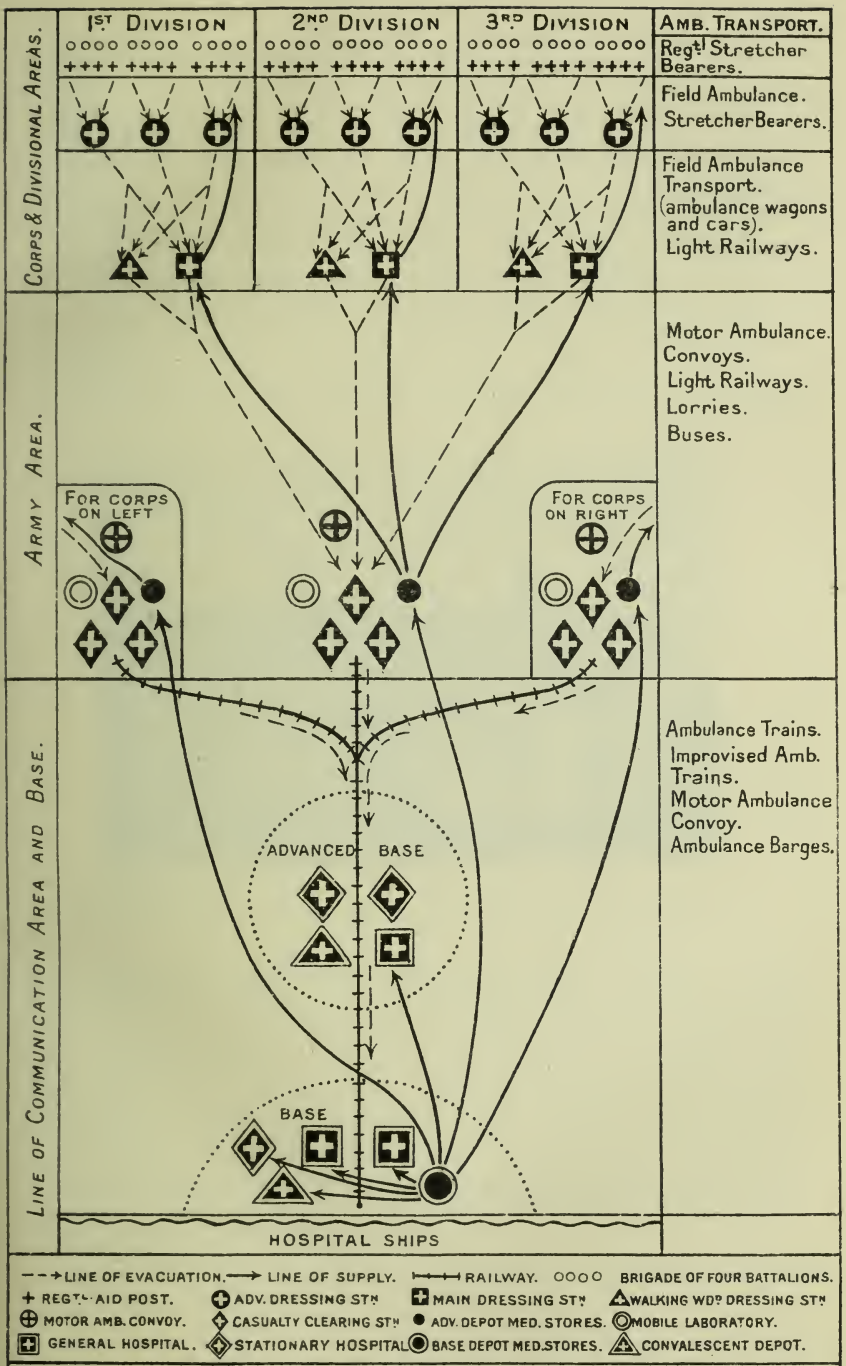

DIAGRAM OF THE ORGANIZATION OF MEDICAL SERVICES FROM A CORPS FRONT OF THREE DIVISIONS IN AN ARMY TO A SEA BASE.

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aid post at the commencement of an offensive. The numbers generally considered necessary were 50 stretchers and 100 blankets. Both articles could be replenished as required by a system of exchange with medical posts further back. The stretcher used was the field stretcher, but various forms of improvized stretchers were used by battalions for bringing wounded back in the trenches ; one form, the Rogers trench stretcher, being officially recognized in July 1915 and issued to battalions in the proportion of four per company. In the later stages of the war it became possible to send up to regimental aid posts the means of combating wound shock by transfusion.*

The collection of wounded by the battalion medical service

A regimental aid post in a row of tenement houses at Armentières.

was effected by regimental stretcher bearers, sixteen of the men of the battalion being allotted for these duties in war establishments. In battle it was the custom to distribute these bearers with the companies. But it became the invariable rule to increase the number of regimental bearers and allot an additional sixteen reserve stretcher bearers at the commencement of an offensive for duty under the battalion medical officer. Bandsmen, pioneers and such other personnel as were available in the battalion were handed over to the medical officer for this purpose.

* See Vol. I, Surgery of the War, p. 127, for an account of the methods and apparatus employed.

Position of a regimental aid post in a trench.

Type of billet in back area.

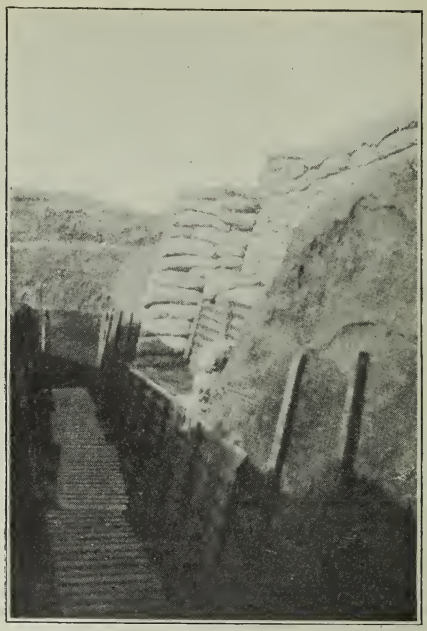
The duties of the regimental bearers were to collect and bring wounded to the regimental aid post, where the medical officer remained in close touch with the officer commanding the battalion. For this purpose the regimental aid post was usually as near battalion headquarters as possible.

The tactical employment of regimental bearers brought out several interesting points, especially in connexion with the use of the reserve bearers. Frequently the reports of the number of wounded to be collected, which were received by the battalion headquarters or sent to the medical officer, were much exaggerated, and in some instances when the reserve bearers were sent out to collect them only one or two wounded

A support trench down which wounded were carried.

were found waiting to be brought in. It became a rule, therefore, to retain the reserve bearers at the regimental aid post until it was definitely ascertained that they were required.

It was found that the bearers with the companies could generally bring all the wounded to the aid post, until the line was advanced. When the length of carry then became greater the wounded were collected in groups and brought to the nearest shelter, such as a trench, dugout, or shell hole. The position of these collecting points was indicated by flags, and notified by map reference or other means to the battalion medical officer, who then employed his reserve bearers in bringing the wounded back from them to the regimental aid post. It was important in sending information back to



Well constructed trench showing shelf on which a stretcher can be rested.

Type of billet in back area.

indicate the number of wounded collected in each group, in order to avoid sending forward more of the reserve bearers than was necessary; and it was also useful to employ guides for bringing the bearers forward to the collecting points.

The best time for collecting wounded and bringing them to the regimental aid post was found to be the period between the time the battalion's objective was reached and the enemy's

Type of billet in back area.

counter-attack launched. During that period the number of men available for collecting the wounded of the battalion was likely to be greatest.

The regimental aid post was normally the furthest point to which the regimental stretcher bearers carried wounded. Their work, in other words, was confined to the area in front of this post. It was essential, however, to indicate the exact position of the regimental aid post to the medical post further back, and to notify immediately any change in its position.

When not employed in the front line and in battle, the regimental medical service was employed in dealing with men

reporting sick, treating trivial cases, and in sanitary supervision of the battalion and its billets, especially in connexion with the sterilization of water supplies and care of the battalion water carts, for which purpose one N.C.O. and four men of the R.A.M.C. were attached to each infantry battalion at the time of mobilization. When, however, the shortage in R.A.M.C. personnel, fit for service in the front line, became felt, the water cart detachment was withdrawn and men of the battalion were trained to take the place of the R.A.M.C.

The Field Ambulances.

A field ambulance was organized in three sections, lettered "A," "B" and "C." The headquarters section, with the commanding officer and quartermaster, was "A" section; "B" and "C" sections were commanded by a major, R.A.M.C. Otherwise the sections were of similar composition, with the exception of the ambulance transport, of which "A" section had four, and the other sections three ambulance wagons or motor ambulance cars each. Further, the whole unit was divided into a bearer division and a tent division. The former consisted of the stretcher bearers only and their officers, and the latter of the remainder of the unit; the general organization being intended in battle to form a main dressing station with the tent division and to employ the stretcher bearers in bringing the wounded back to it from the regimental aid post, through an advanced dressing station established at a point to which the ambulance transport could come up.

By this organization each of the three sections had an equal proportion of the bearer and tent divisions; and these were designated the bearer or tent sub-division of section "A," "B" or "C" as the case might be. The following diagram explains this formation :—

Field Ambulance.	"A" Section.	"B" Section.	"C" Section.
Bearer division.	Bearer sub-division.	Bearer sub-division.	Bearer sub-division.
Tent division.	Tent sub-division.	Tent sub-division.	Tent sub-division.

Cavalry field ambulances were somewhat differently constituted, as they had only two sections, "A" and "B."

The object of this organization was to enable sections or portions of a field ambulance to be detached for duty with small bodies of troops operating at a distance from the main body, and was especially useful in hill warfare or with small mobile columns. Also, in forming advanced dressing stations, it was usual to detach a tent sub-division to accompany the bearer division.

This division of field ambulances into smaller units was, however, seldom if ever resorted to in the operations on the Western front, at any rate during the major operations, except on those occasions when it was necessary to reinforce from a field ambulance the casualty clearing stations of an army during battle. On these occasions it was usual to order a tent sub-division, or a section from one or more field ambulances, to be attached for duty to each casualty clearing station. The sub-divisions or sections were also employed for such special work as the formation of rest stations in divisional or back areas.

In September 1918 there was a proposal to reduce the number of sections to two, owing to the necessity for reducing R.A.M.C. personnel, and also because a three-section field ambulance was an unnecessary division of the unit in the operations of the Western front.

Each division had three field ambulances. A cavalry division had a cavalry field ambulance for each of its brigades. But the field and cavalry field ambulances were divisional units and did not form an integral part of any infantry or cavalry brigade. They came under the direct control and orders of the A.D.M.S. of the division, their position and movements being regulated in the operation orders of the divisional commander.

During an offensive, field ambulances were required to form a chain of medical posts between the regimental aid post and the casualty clearing stations ; as well as reserve posts in back areas for the reception and treatment within divisional or corps areas of those sick and wounded who did not require evacuation beyond these areas.

The posts which field ambulances thus formed normally during operations were as follows, in echelon from the regimental aid posts backwards :—

(1) Bearer relay posts.
(2) Divisional collecting posts.
(3) Advanced reserve bearer posts.
(4) Advanced dressing stations.
(5) Rear reserve bearer posts.

(6) Walking wounded collecting stations.
(7) Sick collecting posts.
(8) Main dressing stations.
(9) Local sick rooms in back areas.
(10) Rest stations for division or corps.
(11) Officers' rest stations for division or corps.

The first five of these posts were formed by the bearer divisions of field ambulances, reinforced by reserve bearers from other units and with one or more tent sub-divisions at the advanced dressing station. The remaining posts were formed by the tent divisions, groups of tent divisions, or complete field ambulances, the number of field ambulances of a division employed in any specific front or back area and

Bearer division of a field ambulance returning from the front.

the position of the posts being determined by the A.D.M.S. of the division, or in certain circumstances by the D.D.M.S. of the corps, to which the division belonged. Also the number of posts would be determined by such circumstances as the width and depth of the line occupied ; a narrow front eliminating some of the divisional posts and concentrating them as corps posts, while a considerable advance of the line involving an extension in depth would necessitate the formation of a considerable number of bearer relay posts and collecting posts. Each of these posts thus presented special points in the tactical employment of the field ambulances.

Bearer relay posts.—The number of these, as just noted, would depend on circumstances ; but relay posts would always

be formed whenever the carry exceeded 1,000 yards. Over dangerous and difficult ground a carry of 500 or 600 yards was the limit of the carry, so that relay posts would be formed at distances of 500, 600 or 1,000 yards backwards from the regimental aid post to the divisional collecting post. Shell holes, dugouts, trenches or other shelters were used by the bearers assembled at each relay, and the routes between the posts were marked by flags or, at night, by transparency lamps.

Country lane with opening to "communication" trench.

The number of bearers at each relay post varied according to circumstances and the number of wounded that had to be carried. As a rule sixteen to twenty-four bearers would be appointed to each relay ; when the work was very heavy they would be reinforced or relieved every twelve hours. It was not, however, every wounded man who had to be carried back. Very rarely did the number exceed forty per cent. of the wounded, but after the first few hours of a battle the number of stretcher cases "* increased in proportion to the walking cases.

* A " stretcher case " was one which required to be carried on a stretcher ; wounded able to walk were designated " walking wounded " ; and wounded able to be carried sitting up in wheeled vehicles a " sitting case " as distinct from a " lying down case."

Divisional collecting posts.—These posts were the outcome of trench warfare. They were formed at points where the wounded could be transferred from hand carriage on stretchers to some form of wheeled transport, such as wheeled stretcher carriers, trollies or trucks on trolley lines, or light railways. They were organized in the same way as relay posts, with one N.C.O. and twenty-four bearers at each, working under the supervision of one or more of the medical officers of the bearer division in order to regulate the loading of the transport. The walking wounded would also be directed as a rule in the first

Light railway and trucks used for walking wounded.

instance to a divisional collecting post, and, if necessary, sent back from there on trollies or trucks. A suitable position for a divisional collecting post would be where lines of relay posts from two or more regimental aid posts converged.

It happened occasionally, especially in the Ypres salient, that a trolley line was interrupted after running for a certain distance back, or did not continue in the direction of the advanced dressing station. When this situation occurred, a rear divisional collecting post would be formed where the wounded were transferred from the trollies to hand carriage again, and a rear line of relay posts to the advanced dressing station would then be formed.

Reserve bearer posts.—The number of stretcher bearers in the war establishment of the bearer division of a field ambulance

is 108 ; so that the total number available from the three field ambulances of a division was 324. Four bearers as a minimum were required for carrying one stretcher. When the number of wounded was comparatively small the resources of the field ambulance proved sufficient, but in preparation for an offensive, during which large numbers of casualties were anticipated, the R.A.M.C. stretcher bearers had to be reinforced by a reserve of men from other units of the division or corps. Consequently, corps and divisional commanders placed 200 men, as a rule, under their own platoon or company officers at the disposal of the divisional A.D.M.S. for this purpose ; and in some instances much larger numbers, up to 600, were allotted. The most

Trench entrance to an advanced dressing station.

satisfactory method of employing them was to post one half at or near the divisional collecting post to form an advanced reserve bearer post, and use them for reinforcing the relay posts further forward and for loading the wounded into the trollies and trucks ; it was, however, considered essential that the trained R.A.M.C. bearers should form the first relay from the regimental aid posts. The remainder of the reserve bearers were posted to a rear reserve bearer post at or near the advanced dressing station, and were used for further reinforcements of the posts in advance and for loading and unloading wounded from transport arriving at or leaving the advanced dressing station.

The advanced dressing station.—This post became probably the most important of the tactical posts formed by the field

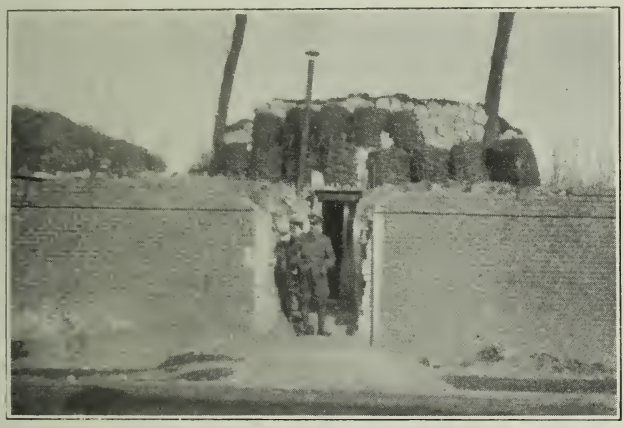
ambulance. One such post was necessarily formed for each division, or one for each brigade in the line, but this would depend on road approaches and the possibility of finding suitably protected sites. The determining factors in the selection of the site were that it should be as far forward as it was safe to bring the ambulance transport, and where reasonable protection could be provided in dugouts, cellars or other suitable shelters. In addition to the essential requirement of good road approaches the site was also determined in the periods of trench warfare by the vicinity of light railways. Shelter for 100 wounded at a time was usually what was required, but the greater the accommodation the better, and where extensive cellars were available much larger numbers could be accommodated. This

Entrance to a collecting post, showing sandbag protection.

extensive accommodation was not required for the retention and treatment of wounded, but for their classification, immediate emergent attention, and rapid evacuation to the main dressing station or in special cases direct to the casualty clearing station. It was important to have the shelters screened as a protection from gas.

One or more tent subdivisions of a field ambulance were employed in forming the advanced dressing station. Their equipment, however, was considerably increased as the war went on. Reserves of blankets and stretchers, pyjama clothing, hot water bottles, oxygen cylinders, splints, and oil stoves formed the bulk of this additional equipment. The pyjamas

and water bottles were obtained as a rule from the field depôts of the Joint Committee of the B.R.C.S. and Order of St. John. The scale at an advanced dressing station at the commencement of an action was usually 100 pyjama suits, 60 hot water bottles, 600 blankets, and 400 stretchers* and a supply of splints. In the later phases of the war equipment for blood transfusion was also added. The dumps of stretchers were reduced to a minimum, as they were liable to be destroyed by enemy fire, and stretchers were readily obtainable by a system of exchange between the field ambulances and casualty clearing stations. Such a system, when properly organized, ensured a practically unlimited supply not only of stretchers, but also of blankets,



Officers' billet built near an advanced dressing station.

hot water bottles and splints. The best distribution of the stretchers, blankets and splints in reserve was in smaller dumps at the advanced and rear reserve bearer posts whence they could be drawn by the reserve bearers and exchanged with the material coming down from the regimental aid posts.

With the large number of casualties in the major operations on the Western front, it was realized that a divisional advanced dressing station or stations would be swamped if all the wounded of a division were brought to it. Consequently the

* The regulation number of field stretchers in a field ambulance was 18, in addition to those carried in the ambulance wagons; but 36 trench stretchers were also added in October and November 1915. Wheeled stretcher carriers of various designs were also issued to field ambulances.

walking wounded were directed to find their way to walking wounded collecting stations; but many walking wounded nevertheless would arrive at the advanced dressing station, and it was necessary therefore to organize the dressing station in two sections, one for stretcher cases and the other for walking wounded. This was all the more necessary as the latter were generally carried back in motor lorries, and the former in motor ambulance cars; so that in order to avoid congestion of the roads, separate posts and road approaches were required for the two classes of cases and their transport. Further, it was found essential to park the transport some distance back, and

Field ambulance officers' tents in bivouac.

only send up to the advanced dressing station one or two ambulance cars at a time, an empty car being sent up whenever a loaded car passed the park on its way back.

The walking wounded collecting station.—In the major operations on the Western front divisions fought on a comparatively narrow front, and when this occurred the remaining posts formed by divisional field ambulances were usually established as corps posts. They were organized in other words to receive wounded and sick from all the divisions of the corps instead of as separate stations for each division, were designated corps instead of divisional stations and were administered by the D.D.M.S. of the corps. They were formed by field ambulances selected by him from the various divisions. In these circumstances one corps walking wounded collecting station would be organized for the more slightly

wounded, able to walk, from all divisions holding the corps front. The selection of site was determined by considerations of good road approaches, and by more or less easy access to light or broad gauge railway lines, especially light railways running from advanced posts ; and it was of importance to avoid the neighbourhood of dumps of warlike material or military constructions, which might attract hostile fire.

The walking wounded were brought to the collecting station from divisional collecting posts or advanced dressing stations by light railways or motor lorries ; but when, as was usually the case, motor lorries could not approach the divisional collecting posts and light railways were not available, the wounded found their way on foot to the advanced dressing station or its vicinity and were there placed on lorries for conveyance to the walking wounded collecting station or went to it on foot.

The chief features in the organization of this station were the provision of ample accommodation for the reception of the wounded, a buffet for refreshments, a place for dressing wounds, and separate accommodation for wounded waiting to be sent further back. As a proportion of the wounds on arrival at the walking wounded collecting station might have assumed more serious aspects, separate accommodation was required for lying down cases. Usually the accommodation in these stations was under canvas, but buildings and other shelters when available were also used. It was essential that the accommodation should be ample, for the station was liable to be severely congested by the large number of wounded arriving at it. The buffet for refreshments was frequently supplied by the Y.M.C.A., and a well-organized corps walking wounded collecting station would have a separate buffet for the wounded of each division of the corps, where their particulars could be recorded and anti-tetanic injections given, and where they could obtain food, such as sandwiches, biscuit, cheese, and warm drinks, while waiting. The wounded, as a rule, preferred hot tea to hot soup or cocoa ; but what they chiefly wanted was a place where they could lie down, rest and go to sleep.

In addition to these requirements, good latrine accommodation was necessary, and in wet and cold weather arrangements for removing wet boots, socks and puttees, for cleansing the feet and providing dry socks.

A corps walking wounded collecting station was formed by the tent division of one of the field ambulances, usually

obtained from the division of the corps in reserve; but it would be reinforced by one or more tent sub-divisions from other field ambulances if necessary.

Reserve dumps of stretchers and blankets were not required here, but a certain number of these articles were kept in the place for wounded who became stretcher cases, to be replenished from the ambulance cars taking them back. The chief requirements were ample supplies of hot water, food and dry socks.

Wounded were evacuated from walking wounded collecting stations either to casualty clearing stations allotted for their reception or to the divisional or corps rest stations, to which the more trivial of the cases likely to be fit for duty in a few days were usually sent.

Rapid evacuation from the walking wounded collecting stations was necessary in order to avoid congestion, and only minor dressings were applied and field dressings readjusted at them. In order to retain the motor ambulance transport for stretcher cases, it was customary to place twenty or more buses, charabancs, or motor lorries at the disposal of the Corps D.D.M.S. for clearing the walking wounded collecting station. In times of less pressure four to six proved sufficient. The number required was based on each lorry or bus being capable of carrying twenty-five lightly wounded. In some of the operations the evacuation of the lightly wounded was effected by trucks on light or broad-gauge railways, but these means of transport had the disadvantage of increasing the congestion at the walking wounded collecting station, as well as at the casualty clearing station to which they brought the wounded; for wounded accumulated at the former until there was a sufficient number to fill the train, and the unloading of a large number at one time at the latter created considerable inconvenience to units already strenuously engaged in attending to the more serious cases.

Collecting posts for sick.—The number of sick coming back during a battle was comparatively small. They were usually collected to reception and evacuation shelters associated with but separate from the walking wounded collecting station, and evacuated by the same methods as the walking wounded.

Main dressing stations.—The formation of a main dressing station was the chief function of the tent division of a field ambulance. When one only was formed for a corps, it was formed by the tent division of at least one field ambulance, reinforced by four or more tent sub-divisions from other field

ambulances of the divisions in the corps. It was sometimes found advisable to form two corps main dressing stations, one for the right sector and one for the left sector, if by so doing wounded could be more easily deflected to different groups of casualty clearing stations and congestion relieved. In many cases, however, divisions formed their own main dressing stations with the tent division or the whole of one of their field ambulances. This was invariably the case in the earlier operations, and it was only during the battle of the Somme and

A main dressing station in huts.

the narrow corps fronts there, that the policy of forming corps main dressing stations by divisional field ambulances was adopted.

The main dressing stations were formed for the reception of the stretcher cases and the more severely wounded, and required a more extensive organization than the walking wounded collecting station. Emergent operations had to be performed, moribund cases retained, and wounded suffering from severe surgical shock or from severe gas poisoning treated until sufficiently restored for removal to the casualty clearing station. Buildings, marquees or huts were consequently prepared as wards for the temporary treatment of 100 severe wounds and twenty to thirty severely gassed cases. In addition, reception, evacuation and dressing rooms, as in the walking wounded collecting station, and an operating room were also required ; as well as such accessories as a mortuary, cemetery, petrol

dump, dump for blankets and stretchers, and reserve supplies of hot water bottles and splints. There was a tendency to form large dumps of stretchers and blankets in main dressing stations; in one, for example, as many as 1,200 stretchers and 4,000 blankets were collected. Large dumps of this nature had the effect of tying up in forward areas blankets and stretchers which might never be required by the divisions concerned, but might be urgently required elsewhere. Such dumps were unnecessary, as stretchers and blankets for forward areas could always be replenished, by a system of exchange, from the casualty clearing stations to which the wounded were evacuated.

The site selected for a main dressing station was, in many respects, similar to that of a walking wounded collecting station,

A main dressing station in huts.

but might be considerably further back. It was, however, found that it was best to place it on a different road circuit from the latter, as otherwise the roads became congested with the traffic to and from the two stations.

The stretcher cases were brought to the main dressing stations from the advanced dressing stations in the motor ambulance cars of the field ambulances. During the earliest period of 1914 there were no motor ambulance cars with divisions, but each field ambulance had ten horse-drawn ambulance wagons. From 1915 onwards only three of these were retained and seven motor ambulance cars were allotted to each field ambulance to replace the ambulance wagons which

Field ambulance bivouacs.

Field ambulance church parade in bivouac.

Refitting panniers of a field ambulance in bivouac.

Field ambulance transport parked.

Field ambulance limber wagon in bivouac.

Field ambulance loading up after bivouac.

Field ambulance leaving bivouac for the front line.

Field ambulance on the march.

Horse ambulance wagon in the snow.

had been withdrawn. A division had thus twenty-one ambulance cars at its disposal and a corps of four divisions eighty-four. Consequently a considerable fleet of motor ambulance cars could be formed for clearing the severely wounded back from the advanced dressing to the main dressing station. Their employment in battle was limited to work in the area in advance of the main dressing stations. Although in several instances the D.Ds.M.S. of corps controlled them and pooled the cars of the field ambulances with those of the motor ambulance convoy cars, only confusion resulted, and the general experience was that it was best to avoid pooling field ambulance cars with convoys and to limit them to their legitimate function of working between the advanced and the main dressing station. The horse-drawn ambulance wagons retained with the field ambulances were found of special use in going over roads unsuitable for motor traffic. They were consequently employed in removing wounded from more advanced positions, and were also useful for local work in back areas.

The ambulance transport of cavalry field ambulances was somewhat different. This transport at the beginning of the war consisted of six light and four heavy ambulance wagons for each cavalry field ambulance ; and when motor transport was introduced the motor ambulance cars replaced the heavy ambulance wagons only.

Local Sick Rooms and Rest Stations.—These were invariably formed in back areas of divisions or corps, and proved of much value in expediting the return to duty of officers and men suffering from trivial sickness or wounds. They originated in the demand for the formation of convalescent companies in the First Army in 1915 after the battle of Neuve Chapelle, when large numbers of trivial cases that were being treated in field ambulances and casualty clearing stations were suddenly transferred to the base hospitals, and from there to England, in order to make room for the anticipated large number of wounded. Eventually it became a recognized practice in divisions and corps to establish a large rest station under one of the field ambulances, or a section of a field ambulance. Some divisions formed their own rest station ; but in the later stages of the war the corps D.D.M.S. established a corps rest station for all divisions of the corps. Some of these were elaborately organized on the same plan as a convalescent depôt on the lines of communication ; that is to say, they had accommodation for 1,000 or more, and were provided with

good dining and recreation rooms, ablution rooms and baths, generally under canvas. When divisions formed their own rest stations, the accommodation was usually for 300. Many of the rest stations were specially equipped for the treatment of scabies, and were known as " Scabies Centres."

Type of château at which field ambulances were sometimes established.

Field ambulance ward in the same château.

The Motor Ambulance Convoys.

The history of the formation of these convoys at the time of the battle of the Aisne, in September 1914, is recorded in the chapter dealing with the medical services during that battle. They were formed to take the place of the empty supply lorries, which up to that time were the sole means of removing wounded from main dressing stations to casualty clearing stations and railheads. In the later stages of the war the number of motor ambulance convoys allotted to the British armies in France was in proportion to the number of corps and armies. Thus the D.M.S. of an army had allotted to him one convoy for each corps, and one as an army reserve. He could retain them under his own control and detail them for work in defined areas, or, as was the more usual practice, he could allot one to each corps D.D.M.S., retaining under his direct control the army reserve convoy only. The convoys were intended for conveying wounded from the main dressing stations to the casualty clearing stations, and from casualty clearing stations to ambulance train sidings, when these were at some distance from the casualty clearing stations. It was in connexion with these entraining duties that the reserve convoy was most valuable, but it was also valuable for reinforcing other convoys in areas where there was difficulty in keeping the main dressing stations clear.

Definite road circuits were, as a rule, allotted by the army or corps headquarters staff for the convoys, in order to prevent interference with other traffic. During the earlier battles of 1915, arrangements were made in the First Army for the supply lorries to complete their work between 6 a.m. and noon, in order to enable the motor ambulance convoys to have free use of the roads during the rest of the twenty-four hours. There were occasions when convoys were detained at main dressing stations until all the cars were loaded. This was a pernicious practice. It was soon abandoned, and the principle was generally adopted of sending back each car the moment it was loaded.

Each motor ambulance convoy consisted of three sections, "A," "B" and "C" and a workshop unit. The headquarters or "A" section had twenty cars and "B" and "C" sections fifteen cars each, formed into groups of five cars. This composition of the unit was convenient when it became necessary to detach a greater or smaller number of cars for duty away from their headquarters. The workshop unit of the convoy remained, as a rule, at the headquarters,

but it was found advisable to have a forward repair workshop in the neighbourhood of main dressing stations for the repair of convoy cars breaking down in the forward position.

Motor ambulance convoys were also held in reserve at G.H.Q. and at the advanced base for local duties, but more especially as a G.H.Q. reserve to reinforce armies at times of heavy casualties, or when a breakdown in the railway system of evacuation occurred. The ideal aimed at was to maintain as a G.H.Q. reserve one convoy for each army in the field under the direct control of the D.G.M.S., but this ideal was never attained. However, from 1916 onwards there was generally

No. 1 Motor Ambulance Convoy.

a reserve convoy available at Abbeville, the advanced base, as well as at G.H.Q., and later a convoy was also stationed at St. Omer and held in reserve by the D.G.M.S. These motor ambulance convoys were employed in place of ambulance trains for the evacuation of sick and wounded from casualty clearing stations to hospitals on the lines of communication when the ambulance trains were unable to relieve congestion in casualty clearing stations.

For local work at the large hospital centres at the bases, motor ambulance convoys, provided by the Joint Committee of the B.R.C.S. and Order of St. John, many of them with women drivers, were employed ; but those in the army areas and G.H.Q. reserve were R.A.M.C. units with A.S.C. drivers,

although the cars of several of them were presented by voluntary subscriptions or by individuals. The Maharajah of Gwalior, for example, presented all the cars for No. 7 Motor Ambulance Convoy, and there were similarly munificent gifts by the B.R.C.S. and other voluntary organizations.

The maximum number of motor ambulance convoys employed in front area work was 14 in 1915, 22 in 1916, 23 in 1917, and 25 in 1918.

The Casualty Clearing Stations.

Casualty clearing stations, mobilized at the beginning of the war under the official designation of "Clearing Hospitals," were instituted to form the link between the field ambulances and the lines of communication.* All sick and wounded were collected in them before being sent to the hospitals at the bases. They had three functions :—

(1) To receive and treat until fit for further transport sick and wounded seriously ill.
(2) To expedite the immediate evacuation to the bases of those fit to travel.
(3) To retain for early return to duty cases of wounds and sickness likely to recover within a few days.

The first of these was a hospital function, the second an evacuation function, and the third acted as a sieve to prevent men being lost to the army unnecessarily. But in the earlier stages of the war the equipment and personnel of casualty clearing stations were not well organized for these purposes, nor were the three functions clearly defined. As the war progressed and as wound treatment gradually came to mean a transfer of the major surgical operations from the base to the front area, the equipment and organization of the casualty clearing stations became more and more adapted for differentiation into these three spheres of work. The history of this development is told by Sir Anthony Bowlby in the volumes on the Surgery of the War.† It was only, however, a condition of stationary or trench warfare that made it possible to give full effect to the demands of the surgeons, as the necessary equipment and accommodation, combined with the unavoidable retention for some time of many of the wounded who had been operated upon, resulted in casualty clearing stations, which were organized as mobile units, becoming practically immobile.

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* See Vol. I, General History Medical Services, p. 10.

† See Vol. I, Surgery of the War, Chapter XI.

They had been designed to be capable of movement in eight or nine 3-ton lorries, but when the expanded units had to be moved from one army to another, or from one position within an army area to another either in advance or retreat, as many as 100, and in one instance 200, lorry loads were used to move a casualty clearing station by road, or a complete train of goods vans or trucks to move it by rail.

The inconvenience of this became apparent during the battle of the Somme in 1916, and the D.G.M.S. then issued an instruction in September of that year for all casualty clearing stations to prepare a schedule of equipment which would enable a light section to advance or retire with sufficient equipment and tentage to enable it to carry on the treatment of 200 seriously wounded without delay in the new position. The amount of material and tentage to be carried by this light section was not to exceed what could be loaded on nine 3-ton lorries.

No transport had been assigned to these units on mobilization, but shortly after the commencement of the campaign in France and Flanders, three 3-ton lorries were allotted to each casualty clearing station. The D.G.M.S. instruction of September 1916, therefore, was intended to enable one of a group of three casualty clearing stations to make an initial move to a new position with the available transport of all three. But in order to increase mobility still further and, at the same time, the usefulness of the light section, two aeroplane trailers were given to each army, and fitted with a portable operating room, the trailer being attached to one of the lorries during the move. An example of the manner in which a trailer was thus equipped is that which became known as the Wallace-Cowley trailer, designed in the First Army after the D.G.M.S. instruction of September 1916 had been issued.*

There was no definite regulation limiting the amount of material and tentage which could be added to casualty clearing stations. Individual commanding officers or Ds.M.S. of armies requisitioned for whatever equipment they might consider necessary ; and much additional equipment was obtained from the stores of the Joint Committee of the B.R.C.S. and Order of St. John. It was found necessary to regulate this, and in September 1917 the D.D.G.M.S. after consultation with experienced commanding officers and quartermasters submitted a schedule of equipment which would satisfy all the requirements of the three functions, which a casualty clearing station

* For a full description of this trailer see Journal of the R.A.M.C. for June 1917, Vol. XXVIII.

was called on to perform. This general scheme of equipment provided for full hospital equipment and tentage for 200 seriously wounded, tentage and equipment for 800 less seriously wounded awaiting evacuation to the base, and shelter for the comparatively small number of trivial cases that the field ambulances failed to dispose of and who were awaiting transfer to divisional or corps rest stations. The new scale of equipment was issued in routine orders by the Q.M.G., G.H.Q., in November 1917 and is shown in Appendix A.

When trench warfare gave place to a war of movement during the advance to victory a similar committee consisting of the D.D.G.M.S. and an experienced casualty clearing station commander from each of the armies met in September 1918 to consider the question of the amount of tentage actually required by a casualty clearing station and its distribution within the unit. Observations were also made during the advance to victory in order to determine the amount of lorry transport required to move a complete casualty clearing station. It was found possible to do so with forty lorry loads.

While these great additions were made to the equipment of casualty clearing stations, the personnel remained practically unchanged from that laid down in War Establishments of 1914, namely eight officers, including the quartermaster, and seventy-seven other ranks. But three chaplains were added to the establishment and one of the medical officers was appointed with dental qualifications. The chaplains attached to casualty clearing stations and to other medical units were of great assistance to the medical personnel, especially during the battle periods. Nursing sisters were attached to casualty clearing stations early in 1915, at first five and then seven.* Later on they were increased according to the requirements, but they were never definitely included in the War Establishment of the unit, and their employment in front areas was determined by the nature of the operations.

This small personnel, while it was sufficient for the work of a casualty clearing station in quiet times, was totally inadequate during battle, and several devices were employed at one time or another to supplement it. Thus, in preparing for an offensive, casualty clearing stations were reinforced by officers and

* The appointment of nursing sisters to casualty clearing stations was at first held in abeyance until the conditions of warfare had become more stabilized, but Colonel Sir Arthur Lee, while watching the medical services on behalf of Lord Kitchener, urgently advocated this step being taken from the very first.

men from field ambulances, from other casualty clearing stations in armies or areas not actively engaged, and from hospitals on the lines of communication. This system of reinforcement, which at first was more or less of a haphazard nature, became in time regularized. From field ambulances one tent sub-division, or possibly two, from divisions in the army concerned, would be allotted to each casualty clearing station receiving the wounded. One of the officers of a casualty clearing station was appointed a surgical specialist early in 1915, and a surgical team, or even two surgical teams with a second surgeon, could then be organized in each casualty clearing station ; so that when personnel from one casualty clearing station was required to reinforce another, a surgical team was sent. Similarly surgical teams were ordered to be organized in the general hospitals at the bases, and they formed the reinforcements sent to the casualty clearing stations when required. These surgical teams were composed of a surgeon, an anaesthetist, an operating room sister and an orderly.

In this way during the later battles, especially those of 1917, as many as six surgical teams, including two formed by the casualty clearing station itself, and two tent sub-divisions of field ambulances reinforced each of the casualty clearing stations receiving the bulk of the casualties, bringing the total number of medical officers on duty in a casualty clearing station up to twenty-two or more. Nursing sisters were also increased in proportion from seven to twenty-four or more. Operating room equipment was obtained by the teams from other casualty clearing stations bringing an operating table and instruments with them. For the teams from base hospitals twelve sets of equipment were kept in reserve at the base depôt of medical stores in Boulogne and sent up when required to casualty clearing stations. This equipment was supplemented by a suitable reserve of surgical cloaks, towels and similar articles being kept, at the request of the D.G.M.S., in one of the field stores of the B.R.C.S. and Order of St. John.

But this organization for reinforcements to carry on the surgical work of the casualty clearing stations during a battle made no provision for reinforcing the rank and file, except by the additional personnel with the tent sub-divisions of field ambulances. Very arduous and continuous work was involved in unloading the motor ambulance cars as they came in, and loading the ambulance trains. To meet this, detachments of fifty men or more unfit for employment in fighting units, from labour companies or other sources, were attached to a casualty

clearing station. They were replaced in 1917 by fifty convalescents from venereal disease, a small camp being pitched for them at each casualty clearing station. These convalescents were kept under treatment and when permanently cured were discharged to duty and replaced by others from the venereal hospitals on the lines of communication. They proved invaluable as stretcher bearers and in various duties outside the ward tents, and themselves recovered from disease more rapidly than when hospitalized at the base.

The number of casualty clearing stations on the Western front corresponded with the number of divisions ; they were allotted to armies more or less in that proportion. They were army troops directly under the control of the D.M.S. of the Army, who was responsible for placing them in strategical positions to meet the anticipated requirements of an offensive. In one of the armies the D.M.S. placed them under the control of D.Ds.M.S. of Corps, while himself retaining direct authority over the personnel. This dual control led to confusion ; the allotting of casualty clearing stations to corps was strategically wrong in principle, and the D.G.M.S. refused to sanction it.

The conditions which determined the selection of sites for casualty clearing stations were proximity to railways, good road approaches, reasonable security from hostile artillery fire and adequate water supply. Sites near supply railheads and dumps of warlike material were to be avoided ; although in many cases this principle of selection was neglected, frequently by dumps being formed in the neighbourhood of casualty clearing stations after the latter had been established.

At first little use was made of tentage for establishing a casualty clearing station, and sites were selected in towns or villages where suitable buildings, such as schools and asylums, were available. The casualty clearing stations were thus usually some distance from the railway siding up to which the ambulance trains came. One of the disadvantages of this was that a number of cars of the motor ambulance convoys had to be allotted for entraining duties. Another disadvantage was the difficulty of avoiding congestion of traffic in the towns, and of finding sufficient accommodation for expansion when there were large numbers of wounded. But the chief objection to buildings was their liability to damage by hostile artillery fire, as was experienced in 1914 and 1915 by casualty clearing stations in Poperinghe, Bailleul and Bethune. In consequence of this, casualty clearing stations in the latter phases of the war were established away from towns in tents or huts on selected sites

where there were ambulance train sidings. The first instance of this was the selection of a site for casualty clearing stations at a railway siding (Remy Siding), three or four miles outside Poperinghe, in 1915, at the time when buildings in Poperinghe became untenable. But the buildings occupied from an early period by casualty clearing stations of the First and Second Armies in Bailleul, Merville, Lillers and elsewhere were retained by casualty clearing stations until they too became untenable during the German offensive of 1918. In the other armies, which were formed later, casualty clearing stations, as a rule, were established under canvas or in huts, and, where possible,

Operation Hut in a casualty clearing station.

ambulance train sidings were constructed alongside of them, thus setting free a number of ambulance cars for the work of clearing the field ambulances. Definite and detailed plans were then gradually drawn up for the siting of casualty clearing station camps, as far away from dumps of warlike material as possible or from any other constructions likely to attract hostile fire from artillery or aeroplanes.

Operating rooms and wards for the more serious cases of wounds were usually in huts, of the Nissen ward or French Adrian types. Large or small marquees laced together provided extensive accommodation for reception and dressing rooms, in separate sections for the lying-down wounded and walking wounded, and as shelters for the majority of the wounded awaiting evacuation to the base. For this purpose

a definite scale of marquees was laid down in General Routine Orders, issued from G.H.Q. in November 1917, which allowed eighty hospital marquees for a casualty clearing station, of which twenty were equipped for 200 patients on a general hospital scale, and sixty for 800 on a casualty clearing station scale.

This accommodation was based on the following capacity of marquees and huts, the patients being on beds or stretchers:—

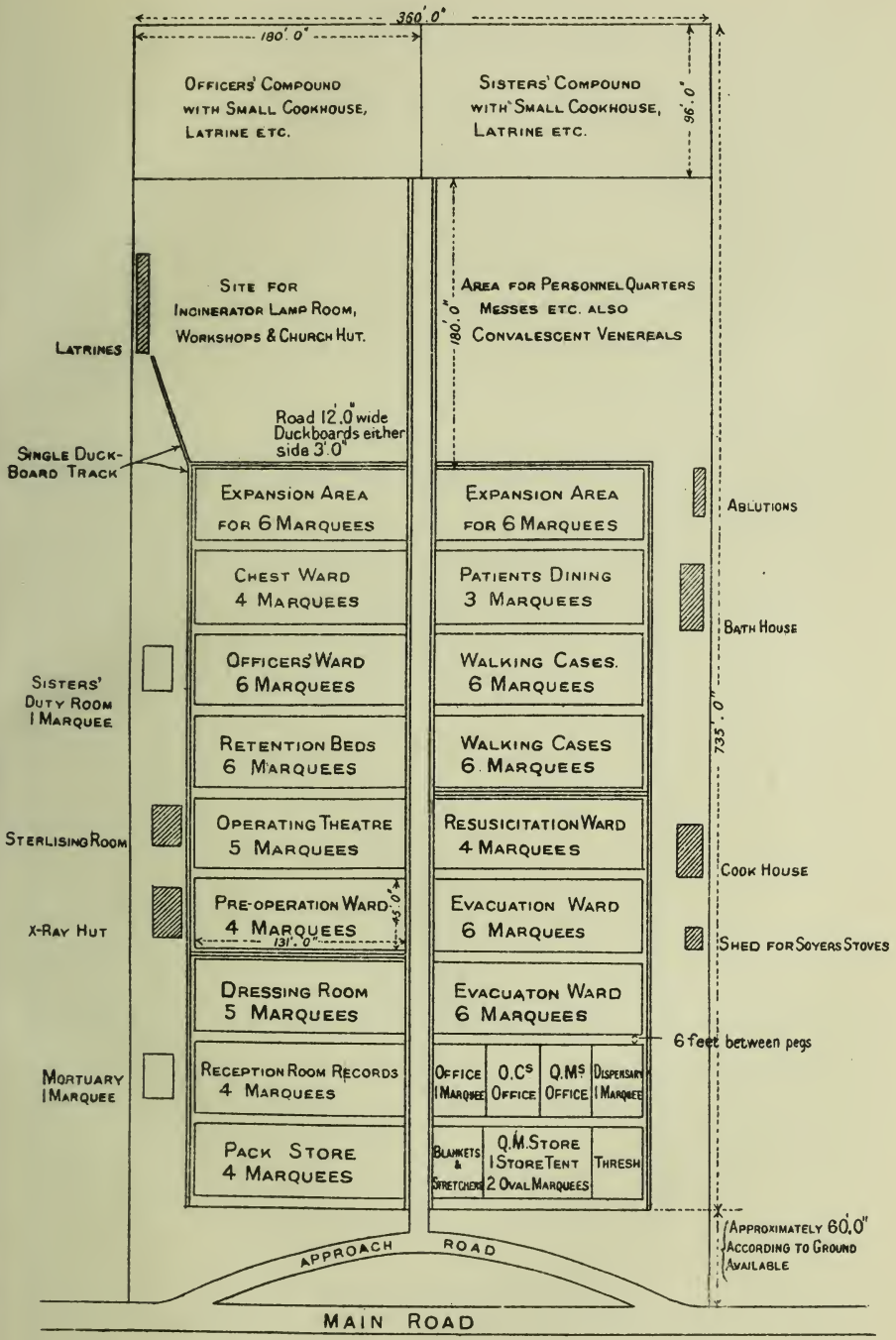
Small marquee—8 beds or 12 stretchers ;
Large marquee—14 beds or 20 stretchers ;
Nissen ward hut—24 beds or 28 stretchers ;
Adrian hut—40 beds or 60 stretchers.

Ward for serious cases in a casualty clearing station.

In addition to tentage a considerable amount of accommodation was provided in the later phases of the war in Nissen ward or other huts. Just before the armistice, too, the French Bessoneau tent was being introduced in place of the British hospital marquee. It gave accommodation for forty in one tent.

For the temporary accommodation of wounded not requiring beds or stretchers the accommodation could be considerably increased as a temporary measure.

But in addition to wards, operating rooms, reception and dressing rooms, accommodation had to be provided for officers and other ranks of the R.A.M.C., for the nursing sisters, and



PLAN OF FIFTH ARMY CASUALTY CLEARING STATION IN 1917 TO ACCOMMODATE 600 PATIENTS.

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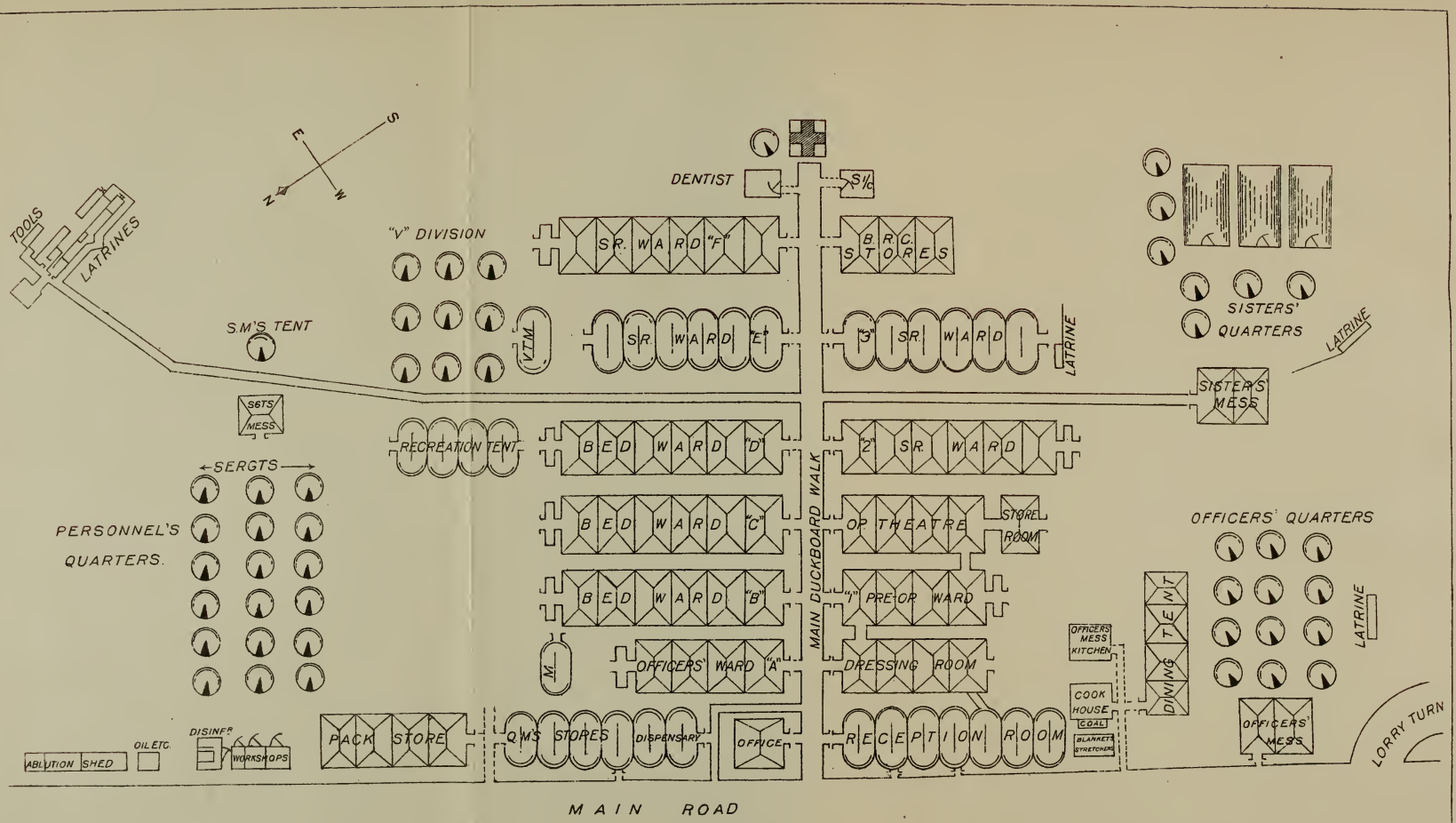

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GENERAL ARRANGEMENT OF A CASUALTY CLEARING STATION OF 500 BEDS IN 1918.

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for the fifty convalescents or labour company men attached for duty. These all formed separate camps of their own. Many accessory constructions, usually of an improvised nature, were also necessary, such as lavatories, baths, latrines, blanket stores, stretcher dumps, sterilizing room, dentists' hut, X-ray huts, shed for disinfector, lamp and oil store, and stand-pipes for water at various points.

The two plans are types of casualty clearing stations, one being that generally followed in the Fifth Army in 1917, but there were various modifications of the plans to suit convenience of site and ground. The D.M.S., Fourth Army, for example, pitched his casualty clearing station camps in 1918 with wide spaces between the rows of marquees in order to minimize the danger from aircraft.

The distribution of casualty clearing stations was strategically important. The best method was to have two echelons—one echelon in a back area of an army, and the other in a forward area; but it was essential that those in the forward area should not be too far in advance. A site 12,000 to 14,000 yards from the front line was about as far forward as was safe; even then a site reasonably distant from important military traffic was desirable. Casualty clearing stations in the back area would be twice as far back. In preparation for an offensive it was advisable to have two in the forward area to one in the back area; whereas in preparation for a defensive the proportion should be one in the forward to two in the back area. Thus an army with fifteen casualty clearing stations preparing for an offensive would have ten casualty clearing stations in forward and five in back areas, and the reverse proportion in preparing for defence.

Another great principle that emerged from the experience of battles with large numbers of casualties was that of grouping two or three casualty clearing stations together, and arranging for each in turn to receive not more than 150 to 200 wounded at a time. This gave the personnel leisure for surgical work and for preparing the wounded for evacuation before the unit received a fresh batch of wounded.

Although the number of casualty clearing stations on the Western front corresponded with the number of divisions, the actual number allotted to each army was not necessarily the same as the number of divisions in the army. This was due to the fact that the latter varied to a considerable extent within short periods of time, and, as the nature of the work in a casualty clearing station demanded as much permanency

of position as possible, casualty clearing stations were generally retained on their original sites until the military situation made it necessary to move them. But in preparing for an offensive the D.G.M.S. carefully considered the number of casualty clearing stations required for the army or armies concerned in the offensive and transferred one or more as required from one army to another in anticipation of requirements. Thus the number of casualty clearing stations in some of the more important battles is shown in the following table :—

Number of Casualty Clearing Stations in Armies at commencement of offensive operations.

Army.	Offensive operation.	Number of C.C.Ss.	Number of Divisions in Army.
First ..	Loos, 1915	12	16
Fourth ..	Somme, 1916	15*	23
Third ..	Arras, 1917	13	16
First ..	Vimy, 1917	11	14
Second ..	Messines, 1917	13	21
Fifth ..	Ypres, 1917	15	19
Third ..	Cambrai, 1917	14	25
Fourth ..	Advance to Victory, 1918	12	19
Third ..	,, ,, ,,	12	18
First ..	,, ,, ,,	12	17
Second ..	,, ,, ,,	12	10

The method of distributing wounded to casualty clearing stations was either geographical or according to the corps engaged, or again according to the nature of the wounds or sickness. In the geographical method sick or wounded from divisions holding a definite geographical area or sector were sent to a specified casualty clearing station or stations. This was a convenient method, as it did not necessitate alteration of instructions whenever divisions or corps moved from one area or one army to another. According to the corps method of distribution, certain casualty clearing stations were allotted to receive the sick and wounded of specified corps ; while in a distribution according to the nature of the wounds or sickness certain casualty clearing stations were designated to receive one class of injury, others another class of injury, such as head, chest, fractured thigh or abdominal wounds, severely wounded, lightly wounded, gassed, nervous disorders, or ordinary sick. This method was generally combined with a

* 14 complete and a section of the Lucknow Casualty Clearing Station.

corps or geographical distribution of casualty clearing stations. For example, the head wounds from all divisions in an army might be sent to one specified casualty clearing station only; or the chest and abdominal wounds from some of the corps to one casualty clearing station, and from the remaining corps to another casualty clearing station and so on.

For the actual reception of battle casualties on the Western front it was found, as a rule, that ten of the casualty clearing stations were sufficient to cope with the work in most of the major offensives, surplus casualty clearing stations in the army being employed for reception of sick, infectious diseases or special cases. The accommodation provided in them, however, was expanded to shelter some 1,000 wounded at a time, so that the ten casualty clearing stations were calculated to hold 10,000 wounded.

The clearing of the casualty clearing stations depended on evacuation by ambulance train, but, in the event of railway lines of evacuation failing to relieve congestion, the D.G.M.S. had always in reserve, as already noted, arrangements for evacuation by road either to the base or to hospitals or casualty clearing stations in armies not engaged in the offensive.

Casualty clearing stations invariably held reserves of stretchers and blankets and other material for replenishing and meeting the requirements of field ambulances during an action. Requisitions from the latter came to the casualty clearing station by the motor ambulance cars bringing back wounded, and the articles demanded were sent up by the motor ambulance cars going forward. The reserves held in the casualty clearing stations were replenished from reserves specially held for the purpose on the ambulance trains, and also by large reserves held by the D.G.M.S. at G.H.Q. Stretchers and blankets were thus automatically replenished during an offensive, and when any special demand was made the G.H.Q. reserves were drawn upon.

Ambulance Trains.

The history of the formation of the first twelve ambulance trains in the early stage of the war is best followed from the narrative in the chapters dealing with the medical services during the events in 1914. They were mobilized in the proportion of one for each division in the field, but at the beginning of 1915 the D.M.S. of the L. of C., by whom they were administered, estimated that the proportion should be one for every 20,000 men in the field, or twenty-five for a strength in the

field of 500,000 men. At that time he was of opinion that this was the largest number of ambulance trains which could be run on the railways available for the British armies. In February 1915 a demand was made on the War Office for twenty-four ambulance trains, and in September of the same year for an additional twelve ; but at no time subsequently during the war was the proportion of one ambulance train per division maintained. Eventually as many as forty-one ambulance trains were sent to France, although some of these were operating in Italy or on the lines of communication between Italy and France. Some six of the trains were normally reserved for work between bases on the lines of communication and did not run to the front areas.

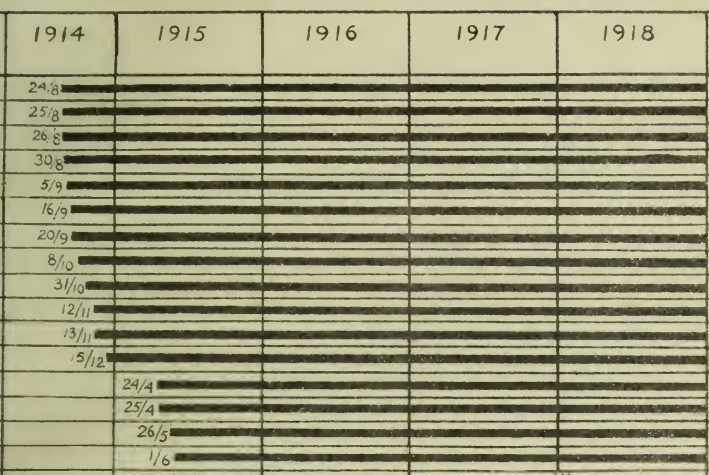
The gradual growth of the ambulance trains and the accommodation in each is shown in the chart. Some of the trains were constructed from voluntary subscriptions and presented to the War Office for duty in France.* Details of their construction and assemblage of coaches will be found in the special chapters on ambulance transport.†

The running of ambulance trains to front areas was at first controlled by the D.G.M.S. staff at G.H.Q., but on the 1st July 1915, after railway transport generally was organized into two groups, a southern and a northern, with an assistant director of railway transport for each, one in the First Army and the other in the Second Army, the control of ambulance trains was decentralized ; the Ds.M.S. of the First and Second Armies being respectively responsible for arranging direct with the A.D.R.T. of the southern and northern railway groups respectively the number of trains required and the places to which they should go. The general procedure was as follows. The D.M.S. would demand from the A.D.R.T. the trains he required to clear his casualty clearing stations. The A.D.R.T. would demand these from the Director of Railway Transport at G.H.Q., who would order them up through his representative on the headquarters of the lines of communication. But if the demands of one army conflicted with those of another army and were in excess of what could be given, the Director of Railway Transport referred the matter to the D.G.M.S., who decided which army should have the

* No. 14. Lord Michelham's Hospital Train.
No. 15. Princess Christian's Hospital Train.
No. 16. } United Kingdom Flour Millers' Hospital Train.
No. 17. }

† Vol. IV. General History of the Medical Services.

CHART SHOWING THE GROWTH OF THE AMBULANCE TRAIN SERVICE IN FRANCE



TRAIN NUMBER	RAILWAY PROVIDING ROLLING STOCK	ACCOMMODATION	
		LYING	SITTING
1	Etat	308	17
2	Etat & P.L.M.	228	154
3	Est & P.L.M.	233	98
4	Nord	354	–
6	Nord	272	–
5	Etat & P.L.M.	212	224
7	Etat & P.L.M.	260	41
8	Etat & Nord	231	84
9	Etat & P.L.M.	271	28
12	G.E. & L.& N.W.	280	–
10	Etat	280	180
11	Etat	262	–
16	G.W.	162	320
17	G E.	160	280
14	L.B.&S.C & L&NW	158	280
15	Birmingham	264	116
22	L. & N.W.	162	280
21	L. & N.W.	162	280
24	L. & Y.	162	320
18	G.W.	162	320
20	G. E.	162	280
19	G. W.	192	266
23	Caledonian	162	292
25	L.B. & S.C.	162	320
29	L. & Y.	306	64
26	G.W.	306	64
30	L. & N.W.	306	56
31	L. & N.W.	306	56
27	G. W.	306	64
28	G.E.	306	56
38	London Rly.	302	33
36	G.E.	306	72
33	G.W.	306	80
32	L. & N W.	306	72
34	Midland	306	80
37	N.E.	306	72
41	L. & N.W.	356	39
35	L. & S.W.	306	80
42	L. & Y.	356	39
39	G.W.	356	39
43	G. W.	356	39

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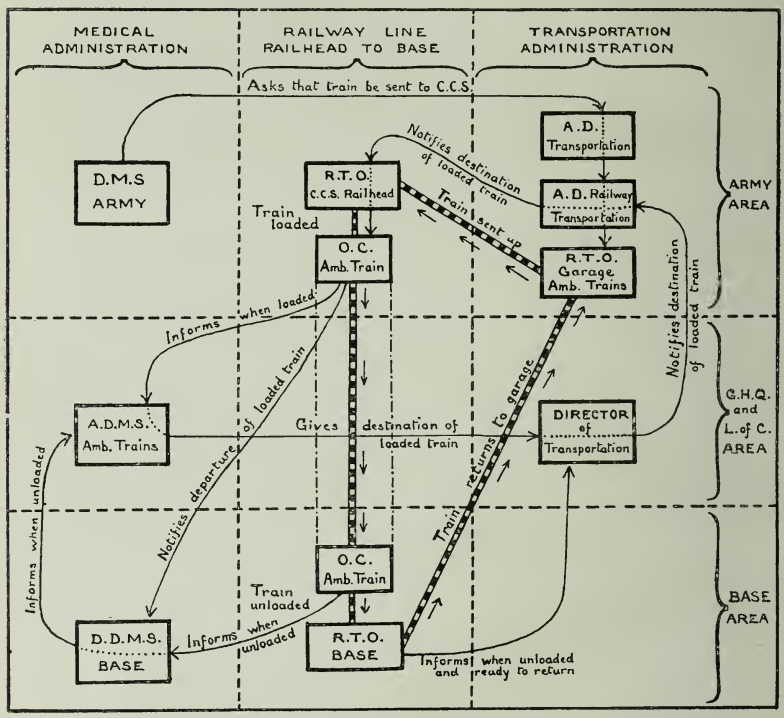
preference, basing his decision on the information he received regarding the number of sick and wounded awaiting evacuation from the several casualty clearing stations.

In March 1915 two officers were appointed to control the off-loading of ambulance trains and loading of ships, one at Boulogne and the other at Rouen. They subsequently became D.A.Ds.M.S. at these bases, responsible for equipping and replenishing ambulance train stores on the southern and northern railway groups. Subsequently a D.A.D.M.S. for administration of ambulance trains was appointed to the staff of the D.M.S., L. of C., as already noted. He became eventually an A.D.M.S., Ambulance Trains, and was assisted by a D.A.D.M.S. When a directorate of transportation was formed under Sir Eric Geddes he was placed in direct touch with that directorate.

The method by which ambulance trains ran to and from army areas after the directorate of transportation was formed was somewhat complicated, as they had to work in with the running of supply and other trains on the railway lines, a difficult matter at times when there was a demand for several ambulance trains on one line. The organization had also to provide for immediate notification of the loading of trains at a railhead, the number of lying and sitting patients entrained, the destination of the train, and for the replenishing of its stores and its return when empty to the army garage or regulating station. All this was carried out by telephone or telegram between the transportation and medical authorities. The former were represented in army areas by the assistant director of transportation (A.D.Tn.), the assistant director of railway transport (A.D.R.T.), and the railway transport officers (R.T.Os.) at casualty clearing station railheads and at the army ambulance train garage ; at G.H.Q. by the directorate of transportation (D.Tn.), which included the directorate of railway transport ; and on the lines of communication by the railway transport officer (R.T.O.) of each detraining station. The medical authorities were represented in the army area by the D.M.S., Army, and the officer commanding the ambulance train ; on the L. of C. by the A.D.M.S., Ambulance Trains, and at detraining stations by the D.D.M.S. or A.D.M.S. of the base, and his embarkation staff officer and the O.C., Ambulance Train.

The diagram on the next page gives a general idea of the scheme of running an ambulance train to and from a casualty clearing station by these officers.

The replenishing of ambulance trains was effected through an ambulance train supply store at Abbeville, a fixed establishment for which was published in 1917. It consisted of one officer and eleven other ranks. But from the earliest days of the war, before advanced depôts of medical stores were established in army areas, a *fourgon* containing medical and surgical supplies was attached to each train. This was continued after



Scheme of Method of Running an Ambulance Train.

the advanced stores were established, each ambulance train being required to maintain a constant reserve of stretchers and blankets to replenish the reserves held at casualty clearing stations.

The carrying capacity of ambulance trains was insufficient to relieve congestion at casualty clearing stations during the major offensives. Consequently improvised or temporary trains were employed for the conveyance to the base of sick and wounded able to sit up. Empty supply trains were used for this purpose to a considerable extent in 1914. After the

battle of Neuve Chapelle the D.M.S. of the First Army endeavoured to organize a system of using empty supply trains in an emergency, and arranged for the maintenance of nine sets of stores—three at Chocques, three at Lillers and three at Merville—each capable of equipping twenty of the covered vans of a supply train ; but, except on one occasion when they were used with satisfactory results, this method of using empty supply trains as a means of conveying wounded in an emergency gave place to organized and numbered temporary ambulance trains (T.A.Ts.), made up of passenger coaches. These were prepared only when an offensive with anticipated large numbers was about to be launched, or when, during the operations, it became necessary to increase the means of evacuating wounded by rail. Owing to misunderstanding regarding the responsibility of appointing personnel to these trains at first, a definite establishment of temporary ambulance trains was not detailed, but after the battle of Neuve Chapelle the responsibility for seeing that they were properly equipped and staffed rested with the D.A.D.M.S. or A.D.M.S. for ambulance trains. Standing orders were issued in October 1915 for the medical officers in charge of these trains, in consequence of complaints of cold and other sources of discomfort in the use of them during the battle of Loos in September 1915.

Ambulance Flotillas.

The use of waterways for conveying sick and wounded was initiated by Mr. Douglas Hall, who organized a British water ambulance fund for providing and equipping barges on the Seine early in the war. A flotilla of six barges, one for personnel, one for stores and four for hospital use was formed by him at Rouen and designated No. 1 Ambulance Flotilla. The barges were grouped in pairs, and contained fifty beds each ; but this flotilla was not used to any great extent. After the battle of Neuve Chapelle in March 1915 the construction of ambulance flotillas for use on the canals was commenced at G.H.Q. Each flotilla was to consist of six barges, fitted with thirty hospital beds, and with accommodation for a staff of one medical officer, two nursing sisters, nine R.A.M.C. orderlies and three R.E. of the Inland Water Transport for navigating duties. There was also kitchen, dispensary and lavatory accommodation on each barge. Four of these flotillas of six barges each were formed, in addition to No. 1 Flotilla, and were designated Nos. 2, 3, 4 and 5 Ambulance Flotillas. They were employed on the Lys and La Bassée Canals, on the Somme Canal, and

in the Dunkerque area. The barges were intended to carry the more severe cases of wounds, and to be towed singly by a tug up and down the canals. Eventually two barges were drawn by one tug ; but this was found inconvenient partly because of the delay in completely loading two barges with severe cases and partly because of the difficulty in navigating

An ambulance barge on the Aire-La Bassée Canal.

Interior of an ambulance barge on the Aire-La Bassée Canal.

two together when a strong wind was blowing. When, however, two barges were towed together there was some economy in personnel, as one medical officer attended to both barges.

When No. 2 Flotilla was formed, an officer was appointed to command it, with headquarters at St. Omer; but, when Nos. 3, 4 and 5 were formed, one headquarters for all four was established at St. Omer, and they were then administered by a D.A.D.M.S. for ambulance flotillas, who was responsible for their personnel, equipment, efficiency and running arrangements.

The class of patients which it was intended to carry on the barges were men suffering from head and chest wounds and gunshot fracture of the thigh, whom it was advisable to subject to as little jolting as possible. They were conveyed on the northern canal system to the hospitals in St. Omer or Calais; and on the Somme to Amiens or Abbeville. As a rule the barges did not move during the night, and, unless the journey could be performed in daylight, had to remain moored to the canal bank for the night.

Depôts of Medical Stores.

Five base depôts of medical stores were formed on the Western front during the war, at Boulogne, Rouen, Havre, Etaples and Abbeville. The depôt at Havre was transferred to Calais at the end of 1915. The depôt at Abbeville, No. 13, was not formed until the Fifth Army was organized in 1916. These depôts obtained their supplies from the United Kingdom, by local purchases or by material, such as splints, manufactured locally. They supplied medical and surgical stores, dentistry and special equipment, and sera and vaccines to the hospitals at the bases and on the lines of communication and to advanced depôts of medical stores in army areas.

The number of advanced depôts of medical stores was generally in the proportion of three to each army, but the number might vary and was smaller in the early phases of the war. They were usually placed where suitable buildings were available. They supplied the casualty clearing stations, field ambulances and other units, except the battalion medical services, which received medical and surgical stores from the divisional field ambulances. An advanced depôt of medical stores was also established at St. Omer for supplying G.H.Q. troops and hospitals in that area from the time when St. Omer was occupied by G.H.Q.

A box car was allotted to each advanced depôt of medical stores for distributing supplies to field medical units.

Until July 1916 all depôts of medical stores were commanded by a medical officer of the R.A.M.C., but on that date the command was given to quartermasters of the R.A.M.C., and, as already noted, a quartermaster with the rank of Lieut.-Colonel was attached to the office of the D.M.S., L. of C., a year later for charge of a medical stores branch, which was formed to regulate demands for material from the United Kingdom and co-ordinate the supplies to army areas. Until then a base depôt supplying an army sent requisitions for fresh supplies direct to the War Office or Army Medical Stores irrespective of what was available in other depôts. By this procedure large supplies might be drawn from the United Kingdom to replenish one of the base depôts at a time when excessive quantities of the same materials might be held elsewhere in France. This was specially liable to occur in the case of a depôt supplying an army engaged in heavy offensive operations. The institution of a medical and surgical stores branch in the office of the D.M.S., L. of C., was therefore intended to scrutinize indents from base depôts with a view to transferring excess in one depôt to make up deficiencies in another, and avoid demanding from the United Kingdom articles the supply of which could be adjusted in France.

A large variety of splints, many of which were subsequently seldom or ever used, gradually accumulated in the depôts to meet the demand or fancy of one or other of the consultants or specialist surgeons. Committees of consultants were consequently formed to draw up lists of splints suitable for use in the front areas and in hospitals at the bases. This led to a considerable reduction in the varieties maintained in advanced depôts of medical stores, and to simplicity in splinting.

Mobile Laboratories for Hygiene and Bacteriology.

The organization and work of the mobile hygiene and bacteriological laboratories are described in the volumes on Hygiene and Pathology. Neither of these forms of mobile laboratory existed on mobilization of the Expeditionary Force, but both types were being constructed and sent to France in 1914; and in 1915 a scale of one hygiene and two mobile bacteriological laboratories for each army was sanctioned.

Mobile X-Ray Laboratories.

Mobile X-ray laboratories were allotted in the proportion of one to each army. They were mounted on motor lorry chassis and were intended to move to one or other of the army casualty

clearing stations as required. But some of these laboratories were heavy vehicles and became more or less immobilized at the casualty clearing station to which they were first sent. Owing to this fact and also to the demands of the consulting surgeons, an X-ray outfit was eventually sent to each casualty clearing station. There was, however, considerable delay in obtaining the required number of dynamos, and in some instances one X-ray outfit worked for a group of two or more casualty clearing stations.

The mobile X-ray laboratory of an army proved of special

No. 5 Canadian Mobile Laboratory in the Mairie at Merville.

value during war of movement, and the X-ray outfit during stationary warfare. The latter had to be loaded on a lorry or railway truck when a casualty clearing station moved.

Mobile Dental Laboratories.

The development of dental services on the Western front is of considerable interest. At first the only dentists in army areas were one with each casualty clearing station, and men requiring artificial teeth and all mechanical work connected with dentistry had to be referred to the base.

As a result of the demands, however, for dental work in army areas a system rapidly developed by which the dentist from the casualty clearing station went on certain days of the week to

work in a divisional area, taking with him the necessary equipment in an ambulance car. This was done to avoid sending men to a casualty clearing station for minor dental complaints. The practice, however, of sending dentures and major dental work to the base continued, although a dental centre for the First and Second Armies was established at Arques, near St. Omer.

In May 1916 a motor dental laboratory was offered through the British Red Cross Society by the Civil Service Motor Ambulance Fund. It was sent to the Third Army and proved so successful that eventually a similar laboratory was supplied to each of the five armies in France also by generous donors. The advent of these laboratories brought mechanical dentistry into army areas, and gradually led to the formation of army dental centres.

A scheme was then prepared by the D.D.G.M.S. in March 1918, after consultation with Ds.M.S. of armies and officers in charge of dental laboratories, to organize a definite system of dentistry in army areas, with the mobile dental laboratory as a nucleus, and with a standardized equipment and establishment. It was proposed to form an army dental centre of three dentists and twenty-four dental mechanics, the senior dentist acting as dental adviser to the Army D.M.S. Associated with the army dental system dental clinics for minor dental work were to be established in the proportion of two for every division, one of them being established at a casualty clearing station and the other in the divisional area. On the lines of communication existing arrangements of large dental centres at the principal bases, but with minor dental clinics in other administrative areas of the lines of communication, were to be maintained.

The Adjutant-General, however, did not accept this scheme on the ground that the men requiring dental treatment in a dental centre might be lost to their units, although the organization was such that no man was necessarily more than twenty-four hours at an army centre at a time. His view was that it would be more suitable to have dental centres for mechanical work in each corps depôt camp, which had been formed in army areas from March 1917 onwards.

In the meantime, however, armies had already formed dental centres round their mobile laboratories, and the German offensive of 1918 upset the system of corps depôt camps. The Ds.M.S. of armies were all strongly in favour of the one centre in each army for mechanical dentistry as being the

most economical system and the most easily controlled. Nothing very definite, however, in the way of organization of dentistry in army areas took place before the armistice, owing to the movements consequent on the advance to victory.

Dentistry with Dominion and American troops was in a much more advanced state and on a more extensive scale than with the troops from the United Kingdom. Thus the war establishments of a Canadian division provided for a dental surgeon with each field ambulance, with each artillery and infantry brigade and with divisional headquarters, in addition to two with headquarters of a mounted brigade. The U.S.A. troops had a dentist and dental equipment with each infantry battalion. This extensive organization for dental work had a definite influence on the British formations.

Sanitary Sections.

The development of sanitary organization on the Western front is described in the volumes on the Hygiene of the War.* At first sanitary sections were mobilized for duty at bases only, with a number of sanitary squads for duty at railheads. No provision was made for sanitary work with the field army except by the sanitary detachments of infantry battalions and other units.†

At the end of October 1914, however, the need of sanitary sections with the field army became apparent, and a scheme for the formation of divisional sanitary sections, composed of one officer and twenty-five other ranks, with an equipment of spades, buckets, picks, wheelbarrow, portable disinfectors, formalin sprays, disinfectants, lamps, screens and poles, directing flags and notice boards, carried in a motor lorry, was submitted for approval. The duties of a divisional sanitary section were to follow the division to which it was attached and clean up recently occupied ground, incinerate rubbish, fill in latrines, dispose of manure, disinfect blankets, clothes and kit, and attend generally to the sanitation of towns and billets in the divisional area, as well as to assist units, such as supply columns, which had no sanitary detachment.

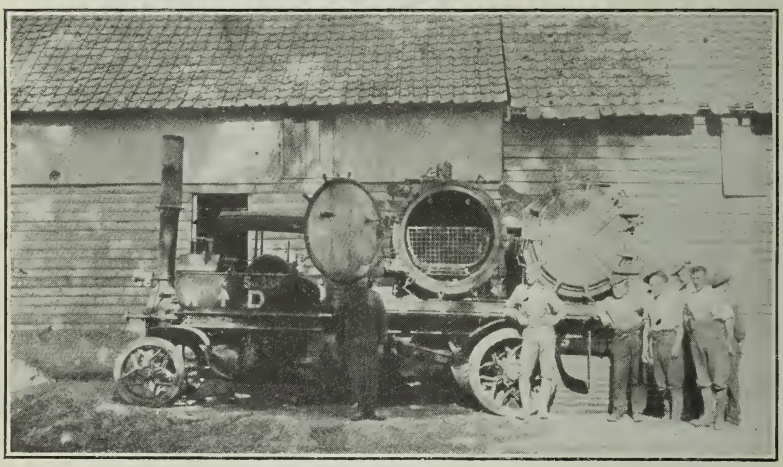
Sanitary sections were consequently sent out from England and their attachment to divisions was begun early in 1915. They formed part of the divisional troops, accompanying their divisions in moving from one sector to another, from one

* See Hygiene of the War, Vol. I, Chapter 1.

† See General History of the Medical Services, Vol. I, p. 15.

corps to another, or from one army to another. This system worked satisfactorily until the battle of the Somme in 1916, when the constant movement of divisions prevented their sanitary sections from settling down to work in any area, with the result that the sanitation of villages, billets and bivouacs, both in the front and back areas, became hopelessly neglected, and dysentery broke out amongst the troops.

A memorandum was then submitted by the D.D.G.M.S. to the Adjutant-General, pointing out this and proposing that sanitary sections should be extra-divisional, and that each army should divide its area into ten or more sanitary areas and have a divisional sanitary section permanently allotted to



Foden steam lorry with duplicate Thresh disinfector.

each, under the general control and supervision of the D.A.D.M.S., Sanitation of the Army. The Adjutant-General, however, refused to sanction this use of divisional sanitary sections, and the D.G.M.S. did not push the matter until April, 1917, when the D.D.G.'s scheme was definitely approved by the Commander-in-Chief and came into force. The scheme provided for the formation of new areas in the event of territory being taken over from the enemy, for adding to the number of sanitary sections in an army by the formation of sub-areas when the number of divisions increased, or special circumstances demanded; and for restoring sanitary sections to divisions in the event of a war of movement with rapid advances

supervening. Cavalry divisions, however, retained their sanitary sections, on account of the special sanitation required for horse lines and disposal of manure. The dominion formations also retained their own sanitary sections, but worked them, as a rule, in corps instead of in divisional areas.

CHAPTER III.

THE MEDICAL UNITS ON THE LINES OF COMMUNICATION AND AT THE BASES.

THE medical units on the lines of communication, other than those engaged in the transport of sick and wounded from the armies in the field, were hospitals, convalescent depôts, sanitary sections and squads, base depôts of medical stores, fleets of voluntary ambulance cars for work at the bases, and hospital ships. The hospital ships were under the administration of the D.M.S. for Embarkation Duties in England and have already been fully described.*

The base depôts for medical stores have been referred to in the previous chapter. There was one base depôt of medical stores for each army, but special stores such as vaccines and sera were distributed eventually to all armies from No. 13 Depôt at Abbeville ; and dental material and special surgical sets from No. 1 Depôt at Boulogne.

The sanitary sections and squads were employed in base areas and other administrative areas on duties similar to those of the sanitary sections in army areas.

Ambulance Transport at the Bases.

The conveyance of sick and wounded to the hospitals from the ambulance trains arriving from the front, and from the hospitals to the hospital ships and ambulance transports for embarkation, was effected by fleets of ambulance cars, most of them organized and staffed by the Joint War Committee of the B.R.C.S. and Order of St. John. Many of these fleets were staffed by members of women's voluntary aid detachments, who not only acted as drivers but also undertook the care and management of the cars. The headquarters of this organization was at Boulogne, under the Commissioner of the Joint War Committee, who was the representative of the committee in France and was responsible to the D.G.M.S., the Chief Commissioner. This organization was gradually evolved from the early days of the war, and led to the greater part of the transport work at the bases being entrusted to voluntary aid. It was one of the most valuable of the duties carried out by the Joint War Committee in France, and was only equalled by

* Vol. I, General History of the Medical Services, Chapter VI.

the organization of Red Cross stores both at the base and in army areas for supplying all kinds of comforts to the hospitals on the lines of communication and to the medical units at the front.

The fleets of motor ambulance cars varied in size, according to the extent of the work at the different bases. The largest fleet was at Boulogne, where a considerable number of cars were held in reserve to replace cars that had broken down. The maximum number of voluntary ambulance cars at each

V.A.D. Ambulance Convoy at Etaples.

of the bases in July 1918, for example, was 129 at Boulogne, 90 at Rouen, 81 at Etaples, 67 at Havre, 38 at Le Treport, 31 at St. Omer, 30 at Calais, and 25 at Trouville. After January 1919 the convoy at St. Omer was augmented by a detachment of the First Aid Nursing Yeomanry Convoy, which was working at Calais. The base convoy at Rouen was provided by the Scottish Branch of the Red Cross Society.*

The Hospitals.

With the exception therefore of the stores, transport and sanitary services, the medical units on the lines of communication were those engaged in the care and treatment of sick and

* For full details of the work of the Voluntary Aid motor ambulance cars in France, see Reports of the Joint War Committee of the B.R.C.S. and Order of St. John, 19.4.18, p. 298 *et seq.*

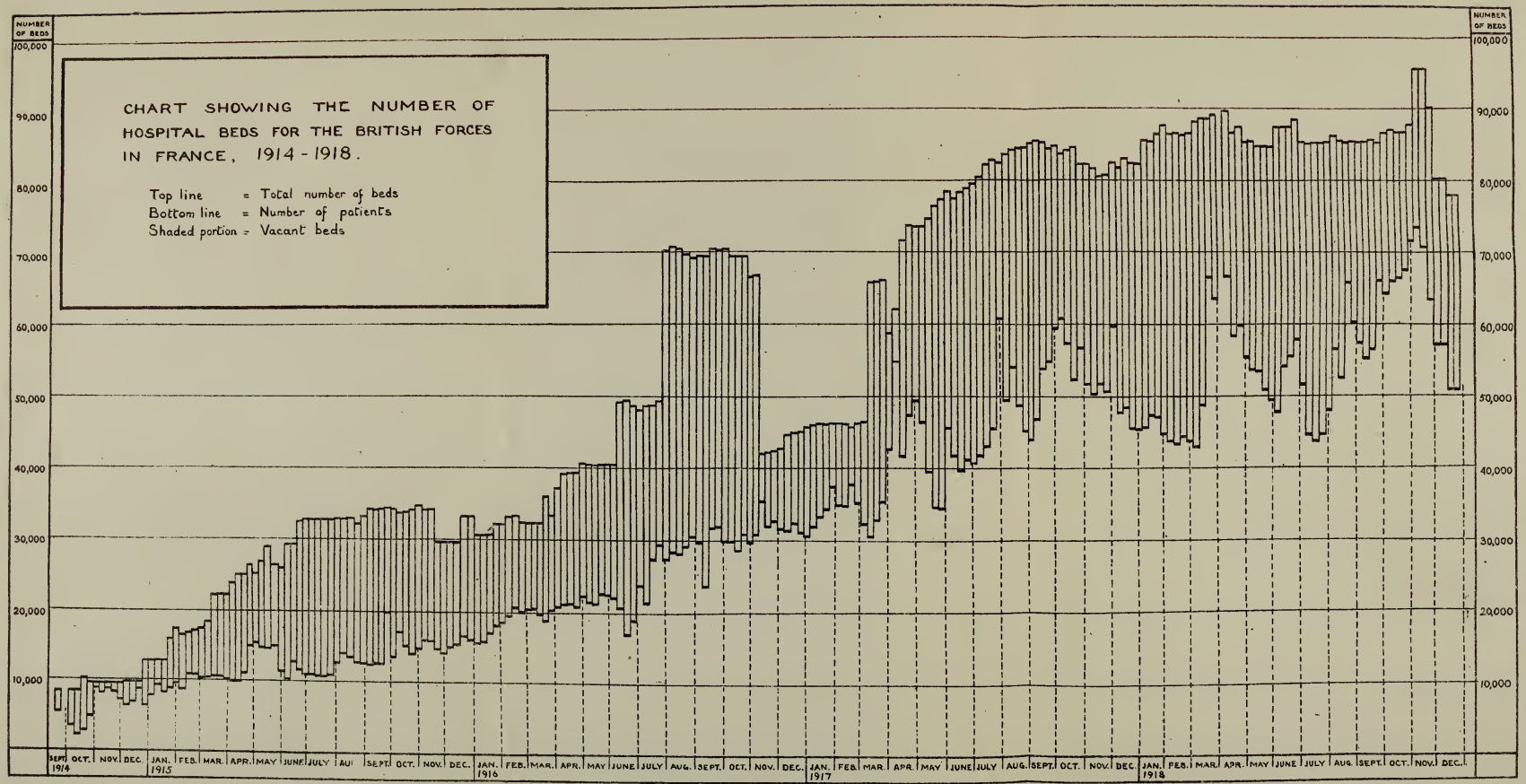
wounded in hospitals and convalescent depôts ; and this formed the chief work of the medical services at the military bases on the Western front.

The hospitals mobilized for the purpose were general and stationary hospitals, but a number of different types of hospital such as detention hospitals, hospitals for coloured labour and voluntary hospitals, were also established in various areas of the lines of communication. Isolation hospitals and hospitals for special classes of diseases were formed by general and stationary hospitals or sections of them ; and hospitals mobilized by the Indian and Dominion contingents were also of the nature of general and stationary hospitals.

General Hospitals.—At the beginning of the war the general hospitals were organized and equipped for 520 beds and the stationary hospitals for 200 beds ; but both types of hospital were expanded from time to time. They had been mobilized in the proportion of two general and two stationary hospitals for each division in the field ; but when it was found that larger units were more suitable and economical for the work in France, new types were organized in 1915, the general hospital becoming a hospital of 1,040 beds, and the stationary, one of 400 beds. They were then supplied in the proportion of one of each class for a division. But general hospitals with even this larger number of beds were not regarded as the most economical type of unit, for when a hospital centre was established at Trouville towards the end of 1917 the three general hospitals placed there were organized for 2,500 beds each.

Stationary Hospitals.—Stationary hospitals, more especially those established at the principal bases, were also so greatly expanded and so fully equipped as to differ in no respects from general hospitals. In fact some had their designation changed, such as No. 9 and No. 13 Stationary, which became No. 39 and No. 83 General Hospitals. The original function of the stationary hospital was to provide a comparatively small sized hospital for posts on the lines of communication and for special duties such as the reception of infectious cases near army areas, but owing to the comparative shortness of the distance between the front and the base very little use had to be made of stationary hospitals as such, and in fact after 1914 practically no new stationary hospitals were sent to France until 1917.

Hospital Accommodation.—The total accommodation in the various classes of hospitals on the Western front varied from some 10,000 beds in 1914 to between 80,000 and 90,000 before the armistice, and 95,000 at the time of the armistice.



NOTE: 1. Up to 3rd September, 1915, there was no differentiation in the returns between hospitals and convalescent depots. Consequently a number of beds in the latter are probably included in the hospital accommodation previous to that date.

2. The period 1st August to 11th November, 1916, and the period 13rd April, 1917 onwards include crisis expansion of hospital accommodation.

3. In the intervening period, 11th November, 1916 to 13th April, 1917, crisis expansion ceased.

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This gradual increase in accommodation on the lines of communication, with the number of patients in the hospitals and vacant accommodation at the end of weekly periods, is shown on the chart.

But the accommodation thus shown did not represent actual hospital beds on all of the dates shown in the chart, for it included what was called crisis expansion of accommodation to meet emergencies. The accommodation in fact represented four different categories :—

(1) The normal bed accommodation, permanently established.

(2) Expansion " A," or the number of fully equipped hospital beds, which could be added to each hospital by taking over more buildings or by increasing the number of tents or huts. This expansion was of a semi-permanent character.

(3) Expansion " B," or the number of beds which could be added in an emergency by placing more beds in the wards and reducing the space normally allowed to each bed.

(4) Expansion " C." The amount of additional accommodation available in an emergency by appropriating the huts for personnel, dining rooms and other accessory buildings and placing trestle cots and mattresses in them instead of hospital beds.

In 1917 the beds of expansion " A " were included in the normal permanent accommodation of the hospitals, and the accommodation in expansions " B " and " C " grouped together under the designation of " crisis expansion." Before this rearrangement the number of beds in the different categories was :—

Normal beds	40,719
Expansion " A "	7,947
Expansion " B "	13,310
Expansion " C "	9,048

Consequently, when the first two categories and the last two were amalgamated as " normal " and " crisis " accommodation, the former included 48,666 hospital beds, and the latter equipment for 22,358 additional beds.

The amount of accommodation which had been aimed at for sick and wounded early in 1915 was 7 per cent. of the strength, or 1,500 beds for each division of infantry including accommodation for patients from the cavalry divisions and

L. of C. troops. But it was considered unnecessary to provide this proportion for a larger force than 500,000, on the assumption that there would be adequate means of transfer of sick and wounded to the United Kingdom. Accommodation for 35,000 equipped hospital beds was consequently demanded by the D.M.S., L. of C., at that time. This number of beds and proportion of beds to strength of the troops was, however, not definitely adhered to, as much reliance during 1915 and 1916 was placed on crisis expansion, increased accommodation in convalescent depôts, and evacuation to the United Kingdom, especially as there was difficulty in maintaining a sufficient personnel for an extensive permanent expansion of hospital accommodation. In fact from June 1915 onwards no additional general or stationary hospitals of the R.A.M.C. were sent to France until 1917.

Still further increase in the number and size of general hospitals in France was made at the beginning of 1918.

The situation after the battles of the Somme in 1916, and before these additions to the number of hospitals in 1917 and 1918 were made, represents the general condition which existed during the greater part of 1915 and 1916. There were then on the lines of communication seven different kinds of hospitals with the British :—

(1) The R.A.M.C. general and stationary hospitals.
(2) General hospitals of the Indian Medical Service for Indian troops.
(3) Canadian general and stationary hospitals.
(4) Australian general hospitals.
(5) South African general hospital.
(6) Voluntary Red Cross hospitals.
(7) Hospitals for coloured labour contingents.

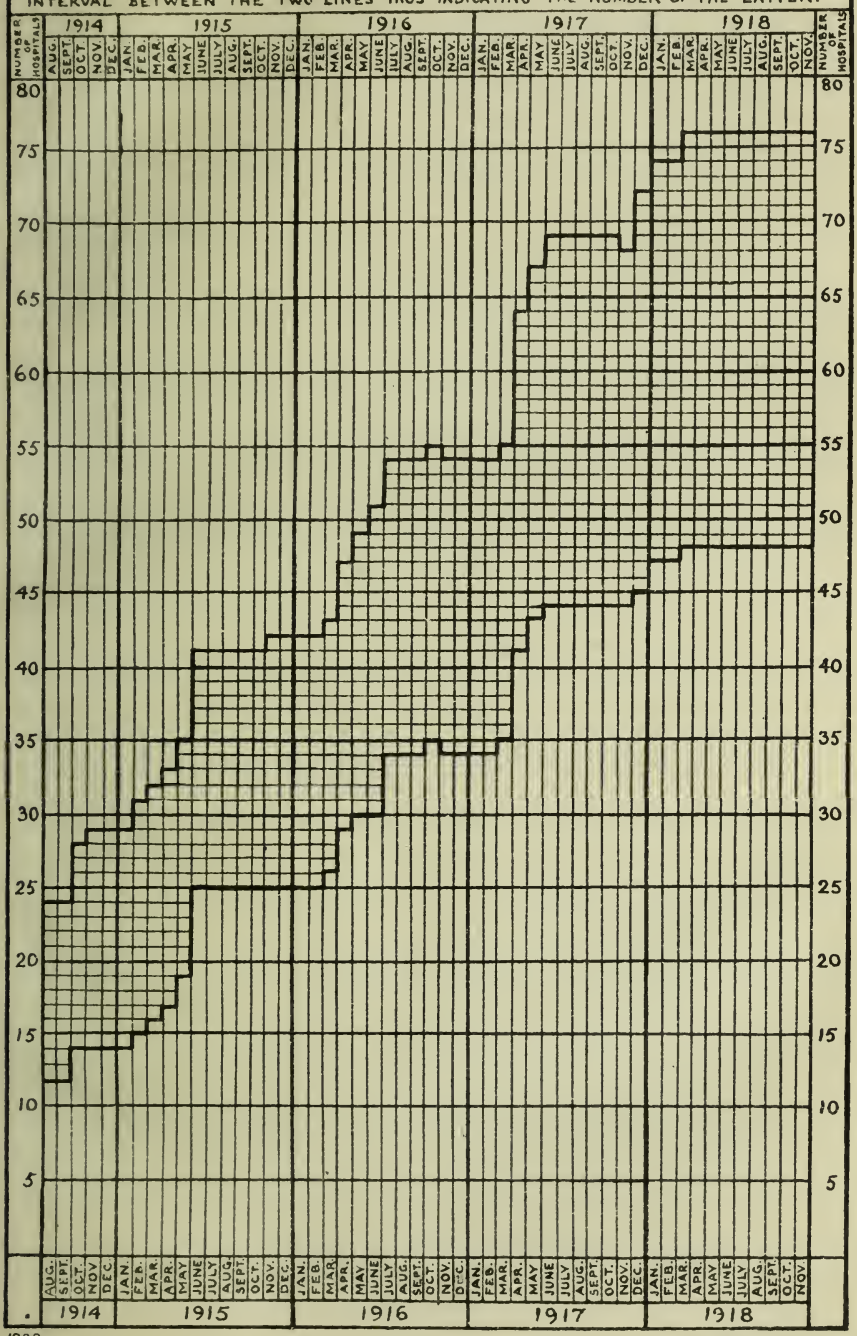
They were distributed as shown in the following table :—

Hospitals after the Battles of the Somme in 1916.

Areas.	R.A.M.C.		Canadian.		Indian General.	Australian General.	South African General.	Vol. Red Cross.	Labour Contingents.
	General.	Staty.	General.	Staty.					
Boulogne ..	3	5*	1	1	—	1	—	1	—
Etaples ..	8	—	2	—	—	—	—	4	—
Calais ..	2	—	—	—	—	—	—	1	—
Havre ..	3	—	—	1	—	—	—	—	—
Rouen ..	6	4	—	—	4/6	1	—	1	1
Dieppe ..	—	½	—	—	—	—	—	—	—
Le Treport ..	2	—	1	—	—	—	—	1	—
Abbeville ..	—	1½	—	—	—	—	1	—	—
St. Omer ..	1	2	—	—	—	—	—	—	—
Marseilles ..	—	1	—	—	2/6	—	—	—	—
Total ..	25	14	4	2	1	2	1	8	1

* Includes No. 32 Stationary Hospital, formerly Australian Voluntary.

CHART SHOWING THE PROGRESSIVE INCREASE IN THE NUMBER OF GENERAL AND STATIONARY HOSPITALS IN FRANCE ON THE LINES OF COMMUNICATION
THE LOWER LINE REPRESENTS THE NUMBER OF GENERAL HOSPITALS AND THE UPPER LINE THE TOTAL NUMBER OF GENERAL AND STATIONARY HOSPITALS, THE INTERVAL BETWEEN THE TWO LINES THUS INDICATING THE NUMBER OF THE LATTER.



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There were thus thirty-three general hospitals, including one for Indian troops, and sixteen stationary hospitals on the lines of communication at the end of 1916, with accommodation for some 45,000 British and 800 Indian sick and wounded. The eight voluntary hospitals were comparatively small units, except the St. John Ambulance Brigade Hospital at Etaples, the total contribution to hospital beds from voluntary sources being equivalent to about one expanded general and one expanded stationary hospital.

Although only one labour contingent hospital was then open, namely, for Cape Boys at Rouen, two base hospitals for South African Labour Corps were being prepared, one at Dieppe and the other at Boulogne ; and a large hospital for Chinese Labour was to be erected at Buchy in the Rouen area, subsequently changed to Noyelles in the Abbeville area.

Hospitals in Army Areas.—But there were four other stationary hospitals in France at the time, which had been appointed to armies. No. 1 New Zealand Stationary Hospital was with the Fourth Army at Amiens, No. 3 Canadian with the Fifth Army in the Citadel at Doullens, and Nos. 6 and 12 with the Third Army at Frévent and St. Pol respectively. There were also two Canadian general hospitals, Nos. 6 and 8,* in Paris, but they were used for the reception of French sick and wounded only. The accommodation in these and the accommodation in casualty clearing stations and field ambulances, which varied from time to time and place to place, were not considered in estimating the requirements of hospital beds in France.

Expansion of Hospitals from 1916 *Onwards.*—During the battles of the Somme in 1916 orders were issued for crisis expansion of accommodation to be carried out to the utmost extent from the 1st August onwards. This expansion was closed down in November, but equipment for future crisis expansion was held in ordnance stores. At the same time, during the winter, evacuation to the United Kingdom was being restricted partly on account of intensive submarine activity and partly on account of the efforts made to reduce wastage of man-power. Consequently when preparations were being made for an offensive at Arras in the spring of 1917 the number of vacant beds had been reduced to some 8,000 or 9,000 only ; and it was necessary then to consider what steps

* No. 8 Canadian General Hospital arrived in France originally as No. 4 (Canadian) Stationary Hospital in November 1915 and was converted into a general hospital in July 1916.

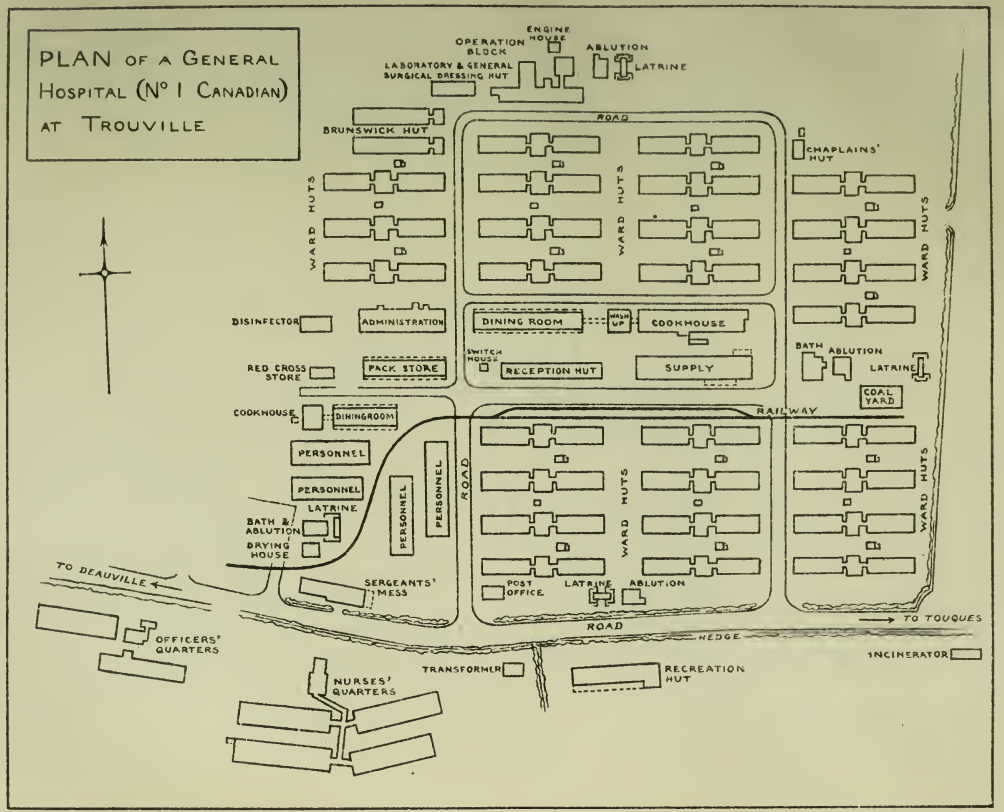
should be taken to secure approximately 40,000 vacant beds in anticipation of the battle. Crisis expansion was then reintroduced and increased evacuation by sea maintained for several days. But this experience led to a demand for an increase in the number of normal hospital beds, and seven new general and five stationary hospitals were organized in the United Kingdom. The general hospitals arrived in France about the beginning of May 1917. All of them were organized by the Territorial Force General Hospitals, and numbered 53, 54, 55, 56, 57, 58 and 59 General Hospitals. No. 56 was opened at Etaples, Nos. 58 and 59 at St. Omer, and the remaining four in the Boulogne-Wimereux area.

The new stationary hospitals were Nos. 38, 39, 40, 41 and 42. Nos. 41 and 39 went to Gailly and Aire in the Fourth and First Army areas respectively; No. 38 to Calais, No. 40 to Havre, and No. 42 to Amiens, then taken over by the L. of C.

In the spring of 1917 the formation of new hospital centres south of the Seine was contemplated, and at one time it was proposed to run the large hospital ships to St. Nazaire or Brest, in order to avoid submarines operating outside Havre. Reconnaissances of suitable sites for a new centre were made in Brittany and elsewhere, and a site on a plateau above Trouville and Deauville was finally selected. There were obvious disadvantages in selecting sites further afield. The increased length of the ambulance journey from the front areas, for example, would mean the mobilization of more ambulance trains, as well as adding to the discomfort of the wounded and sick.

The three new general hospitals in this new centre were for 2,500 beds each. They were opened in March and April 1918, and added 7,500 beds to the normal hospital accommodation; but, apart from these additions in 1917 and 1918, and the addition of No. 81 General Hospital, sent to Marseilles from Malta at the end of 1917 in connexion with the operations in Italy, the general and stationary hospitals in France were practically the same as those there in the middle of 1915.

Very few changes were effected in the positions of individual general or stationary hospitals on the lines of communication during the war. But when the hospitals at Etaples were attacked by aircraft in May 1918, and St. Omer became more or less untenable, the removal of hospitals from these centres was considered. New sites were then reconnoitred south of the Seine, and plans prepared for a large hospital centre at



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Evreux, on the Rouen-Paris road, south of the Seine. It was never, however, occupied, but No. 1 Canadian General Hospital, No. 6 B.R.C.S. (Liverpool Merchants'), and the St. John Ambulance Brigade Hospital were moved from Etaples to Trouville. No. 57 General Hospital was transferred from Boulogne to Marseilles in November 1917 to act as a base hospital for the British forces in Italy ; and No. 11 General Hospital went from Etaples to Italy at the same time. Nos. 58 and 59 General Hospitals at St. Omer and No. 7 Canadian Stationary Hospital at Arques were closed and parked at Rouen from June 1918 onwards, No. 58 being opened there before the armistice, but not until the beginning of November 1918. No. 7 General Hospital was also moved from Malassise, near St. Omer, in June 1918, and opened at Boulogne as a special hospital. No. 42 Stationary Hospital had been withdrawn from Amiens during the German offensive of 1918, and No. 3 Canadian Stationary Hospital from Doullens in June. The former was opened in the Etaples area, and the latter, after being parked for a time in Rouen, went to Malassise, opening there at the beginning of November 1918.

Nos. 7, 8, 9 and 10 Canadian Stationary Hospitals came over to France in the later stages of the war ; No. 7 to Arques, in the St. Omer area, in May 1917 ; No. 8 to the Canadian Forestry Centre and Independent Air Force in the neighbourhood of Nancy ; No. 9 to St. Omer in the middle of December 1917, and No. 10 at the end of December 1917 to Calais.

Hospitals for Labour Contingents.—Seven hospitals for the sick of native labour contingents were specially organized.* They varied in the amount of accommodation from 50 to 100 and 200 beds, and one was a large general hospital of 1,500 beds for Chinese. They were given distinctive numbers. No. 1 was at Dieppe for South African coloured labour men, No. 2 was at Boulogne, No. 3 was the Chinese general hospital at Noyelles, No. 4 was at Rouen, No. 5 at Marseilles, and No. 7 at Havre. Each of these hospitals had a staff of R.A.M.C. officers and other ranks, and native assistants. Thus, to the Chinese general hospital were allotted 15 officers, including a quartermaster, 64 British other ranks, and 161 Chinese, including an interpreter. In addition to these, sections of Nos. 2 and 30 General Hospitals at Havre and Calais were also used for special cases amongst native labourers ; and small hospitals were equipped for them at Cherbourg and St. Germain au Mont d'Or on the Mediterranean L. of C.

* One of these hospitals, No. 6, was opened at Taranto in Italy.

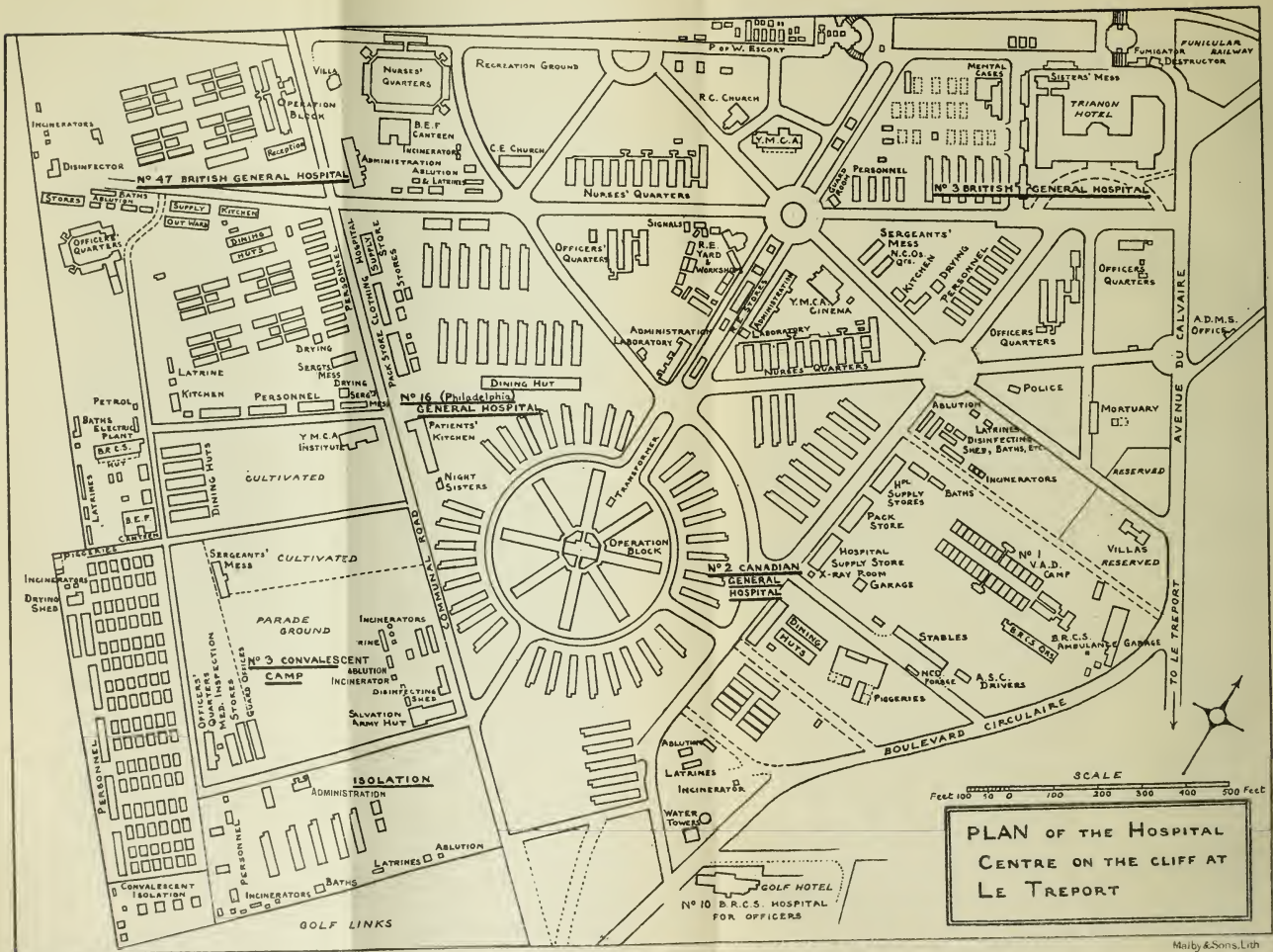
" *Military Hospitals.*"—Hospitals designated " military hospitals " were opened at Cherbourg and St. Germain for British troops, and a small " military hospital " at Montreuil, with No. 20 Field Ambulance at Hesdin, for G.H.Q. troops. At Paris a hospital designated the " Station Hospital, Paris," was opened in June 1918 with 44 beds, 2 medical officers, 3 nursing sisters, and 15 other ranks. Previously, there was only a small detention hospital there, in the motor repair workshops at St. Denis.

Detention Hospitals.—Eight detention hospitals for the Canadian Forestry Corps were opened in the neighbourhood of Rouen, Bordeaux, in the Jura, the Vosges, Haute Marie, and elsewhere. They were organized for 12, 25, 35 or 50 beds, with one medical officer for each of the smaller hospitals and two for the 50-bed hospitals. But at La Joux in the Jura, the Canadian Forestry Hospital was specially organized on a more elaborate scale for 150 beds, with 3 medical officers, 12 nursing sisters, and a personnel of 38 other ranks.

Detention hospitals for British sick were also organized and given a definite war establishment for a 12-bed and a 50-bed hospital. They were intended for the temporary reception of sick in areas where there were no hospital centres near at hand.

Local Hospitals.—Another class of hospital was called a " stationary hospital," designated by the name of the locality and unnumbered. One was the " Marseilles Stationary Hospital " for infectious and other special diseases at that base and for British sick, and another the " Abancourt Stationary Hospital " for sick amongst the large staff of British at military depôts there.

Voluntary Hospitals.—With the exception of the hospital of the St. John Ambulance Brigade, the voluntary hospitals were numbered as hospitals of the British Red Cross Society. No. 1 was a hospital for officers in the Casino at Le Touquet, in the Etaples area, founded and directed by the Duchess of Westminster. It was opened in September 1914 with 200 beds, increased to 250, and remained at Le Touquet till the end of the war. No. 2 was also an officers' hospital at Rouen organized by the B.R.C.S. It was opened in September 1914 with 250 beds, reduced to 200, and remained at Rouen till the end of the war. No. 3 was a small hospital organized as a voluntary hospital of 12 beds at Abbeville in October 1914 and handed over to the Friends' Ambulance Unit as a hospital for 50 beds in July 1915. It was closed in January 1916. No. 4 (Sir



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Henry Norman's) and No. 5 (Lady Hadfield's Anglo-American) were at Wimereux, near Boulogne: they were small hospitals of 100 and 70 beds respectively. The former opened in November 1914 and closed in December 1915; the latter opened in December 1914 and remained open till the end of 1918. No. 6 was known as the Liverpool Merchants' Hospital. It opened in April 1915 in the Grand Hotel, Paris Plage, in the Etaples area, with 250 beds, but moved to huts at Etaples shortly afterwards. In November 1917 its accommodation was increased to 350 beds, but, owing to air raids, the unit closed in June 1918, was reopened at Trouville in September and closed in December. No. 7 was known as the "Allied Forces Base Hospital," organized by a committee under Lady Sarah Wilson. It had a short existence with 200 beds at the Hotel Christol, Boulogne, from the 23rd October 1914 to 11th January 1915. It was reopened for about five months at Etaples from August to November 1915. No. 8 was the Baltic and Corn Exchange Hospital. At first it opened in Calais with 105 beds at the end of October 1914. In July 1915 it was transferred to Paris Plage and reopened in September of that year. It had 300 beds at one time, but these were reduced to 200 and the hospital then became entirely an officers' hospital. At the end of 1917 it was transferred to Boulogne, owing to the insanitary condition of the buildings in Paris Plage. At Boulogne it took over the hotel occupied by No. 7 Stationary Hospital in January 1918 and remained there till it was demobilized at the end of the war. No. 9 was a hospital organized and directed by Millicent Duchess of Sutherland. It had gone to Belgium at the beginning of the war and was captured at Namur. A new unit was then formed and brought to Dunkirk (Malo les Bains) in November 1914, nominally for French wounded. In November 1915 it was transferred to Calais and opened as a 100-bed hospital for British. In March 1918 it was permitted to come up to St. Omer and opened in April at Longuenesse, attached to No. 58 Casualty Clearing Station, which was in the château there, having replaced No. 9 Canadian Stationary Hospital. During the advance to victory it followed the advance of the Second Army, first to Hazebrouck and then to Roubaix and demobilized after the armistice. No. 10 (Lady Murray's) was at Le Treport as a hospital of 50 to 60 beds for British officers from June 1916. Originally, however, it had opened at Le Treport for French wounded so far back as November 1914. The St. John Ambulance Brigade hospital was established at Etaples in huts specially constructed for it and brought over

from England in July 1915. It was organized for 520 hospital beds, was opened on 6th September 1915, but, after suffering considerable damage with much loss of life from air raids on the 19th and 31st May 1918, it was transferred to Trouville and reopened there on 23rd October 1918. It was demobilized at the beginning of March 1919.

A hospital designated " Queen Alexandra " hospital had been established for French and Belgians at Dunkirk by the Friends' Ambulance Unit. It maintained also 50 beds for British sick, and came directly under the administration of the A.D.M.S., Calais. Another voluntary hospital, which eventually became a military hospital, was the Australian Voluntary Hospital organized by Countess Dudley and a committee in London. It was the first voluntary hospital to arrive in France, when it opened at St. Nazaire on the 5th September 1914 under the command of Lieut.-Colonel Eames. It had been equipped for 200 beds, and, after St. Nazaire was closed as a base, it was transferred to Wimereux. When it was no longer possible to maintain the hospital from voluntary sources, arrangements were made to convert it into a military stationary hospital with the original personnel doing duty in it. The hospital consequently became No. 32 Stationary Hospital, with Lieut.-Colonel Eames as its commanding officer.

Special Hospitals.—It was not practicable to organize to any extent large central hospitals for special classes of disease or wounds in France. Although such central special hospitals were frequently demanded by specialists and consultants, it was obvious that an ambulance train arriving at a base with sick and wounded from an army area would have a variety of cases on the journey; and if special cases had then to be transferred to some distant central hospital an additional journey and special transport would be required.

This applied chiefly to the *fractured femur* class of case. The general practice in 1915 was to evacuate these cases to the United Kingdom as soon as possible, often after an interval of a few days; but towards the end of the year a memorandum was issued,* to the effect that fractured femur cases should not be sent to England in less than four to six weeks after admission to hospital. Consequently a hospital was selected at each base for the reception and treatment of these cases and a special establishment, including a number of masseurs, allotted to it. The methods of treatment, however, varied in the different hospitals, and, in order to arrive at a more uniform treatment

* " Procedure in selecting cases for evacuation."

in accordance with what had been proved to be the best method, the scheme of specially selected hospitals with special staffs was further developed, and at the beginning of 1918 beds with special fracture apparatus and officers trained in treating the cases were set apart for the purpose in certain selected hospitals at each centre, namely :—

No. 7 General Hospital, at St. Omer (Malassise).
No. 8 Stationary Hospital, at Wimereux.
No. 4 General Hospital, at Etaples.
No. 1 Canadian General Hospital, at Etaples.
No. 1 South African General Hospital, at Abbeville.
No. 47 General Hospital at Le Treport.
No. 8 General Hospital, at Rouen.
No. 2 General Hospital, at Havre.

At Calais No. 9 B.R.C.S. Hospital was also fitted specially for fractured femur cases and allotted for their reception there.

When investigations were made to ascertain the probable number of beds which it would be necessary to allot for these special cases it was found that between July and November 1916, the period of the battles of the Somme, 3,173 fractured femur cases had been admitted to hospitals on the lines of communication, distributed as follows :—

Rouen	1,023
Etaples	762
Boulogne	743
Abbeville	318
Havre	134
Le Treport	75
St. Omer	62
Calais..	56

Of these, 624 had been transferred from the Boulogne base to England during that period. The average stay in hospital before transfer had been seven days, the shortest period being $1\frac{1}{4}$ days and the longest $45\frac{1}{4}$ days. Many difficulties arose with regard to their retention in France until bony union had taken place, chiefly on account of the large accumulation of such cases, the consequent congestion of the hospital accommodation, the necessity of retaining permanently in these hospitals a special staff of medical officers, nursing sisters and other ranks who could not be made available for reinforcing deficiencies in personnel elsewhere, and the risks incurred in connexion with fire and air raids in consequence of the immobile nature of the fracture apparatus set up in the wards. It became necessary therefore after the German offensive of 1918 to adopt measures which removed some of the restrictions on the transfer of these cases to England.

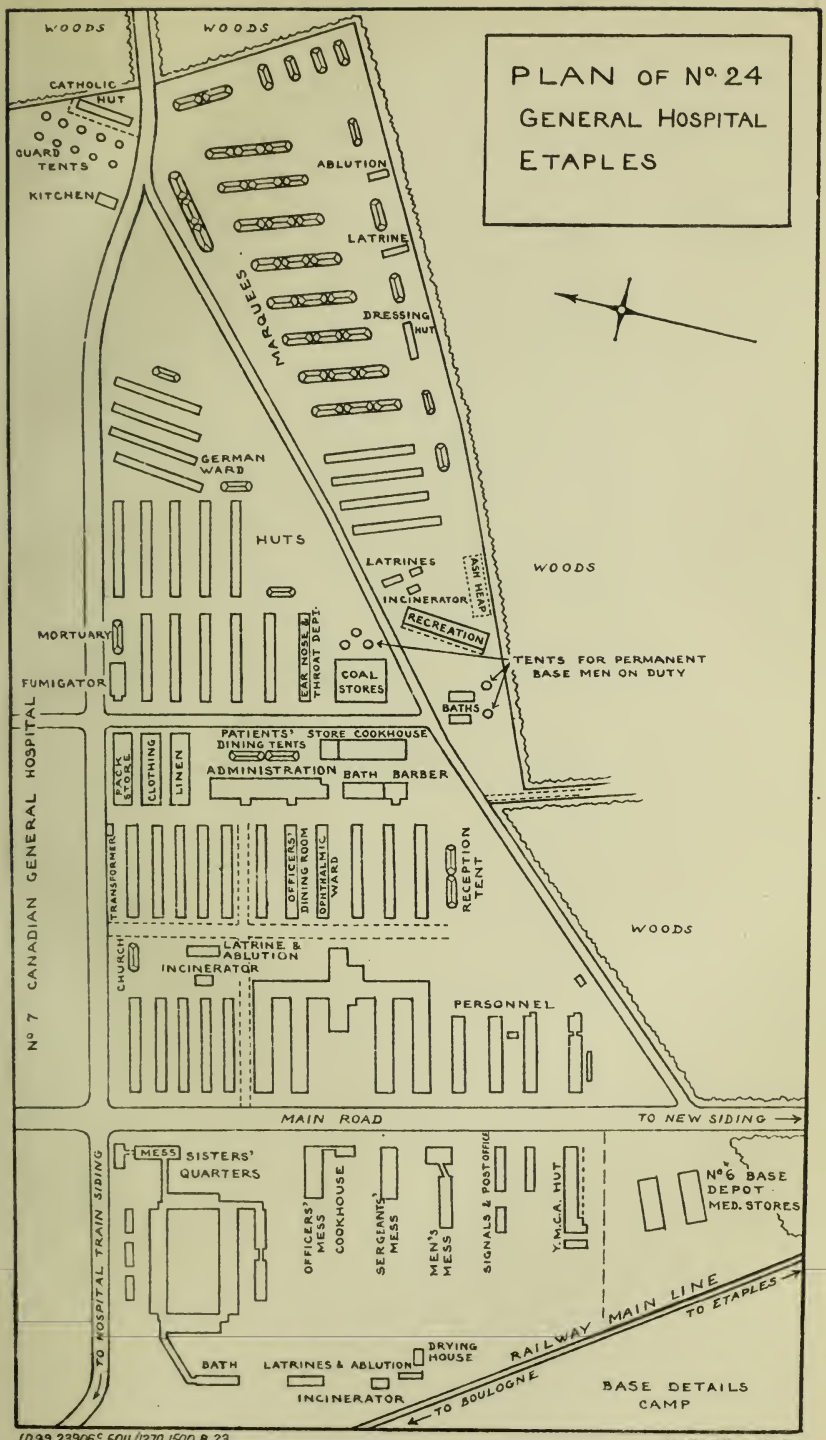
The only other class of cases on which definite restrictions were placed in connexion with evacuation to England were

venereal diseases. There was not the same difficulty in arranging for these cases to be sent to two or more central hospitals, although this interfered to some extent with bringing them under suitable treatment at the earliest possible moment; but early in the war orders were issued to retain all such cases in France until fit for duty. The result was a great accumulation of venereal disease patients in the hospitals on the lines of communication, as the period required for cure or freedom from infectivity varied from several weeks to several months. At first they were sent to one of the stationary hospitals at Havre, which had eventually to be increased to a hospital of 2,000 beds and more, and was then converted into a general hospital. Another general hospital at Etaples, a stationary hospital at Rouen, a section of a general hospital at Calais, a stationary hospital at St. Omer, and a general hospital at Boulogne were also converted into hospitals for venereal diseases, in order to provide for the large number of these cases which had accumulated in France.

A special hospital, No. 25 General Hospital, was kept for *skin diseases* at Hardelot, in the Boulogne area. At the end of 1916 *infectious diseases* were being sent to No. 14 Stationary Hospital at Boulogne, and to sections of No. 24 General Hospital at Etaples, No. 2 General Hospital at Havre, No. 25 Stationary Hospital at Rouen, No. 16 General Hospital at Le Treport, No. 2 Stationary Hospital at Abbeville, No. 35 (afterwards to No. 30) General Hospital at Calais, and No. 7 General Hospital at St. Omer. This arrangement continued with slight modifications until the end of the war, the chief alteration being the allotting of a complete general hospital, No. 46, for these cases at Etaples in place of a section of No. 24, and of a complete stationary hospital at Havre, No. 52, in place of a section of No. 2 General Hospital. In 1918 sections for infectious cases were also opened in connexion with the general hospitals at Trouville. The accommodation thus allotted for infectious diseases amounted in August 1918 to some 3,300 beds, of which 1,000 were in No. 46 General Hospital at Etaples.

Special wards were also allotted for *mental cases* at Boulogne, Etaples, Le Treport, Rouen, Havre and Trouville; but the total number of beds was comparatively small, amounting only to 230 in August 1918, as these cases were evacuated as early as possible to the United Kingdom.

Other special cases of wound or disease had no special allotment of beds, but the majority of *eye injuries* were treated



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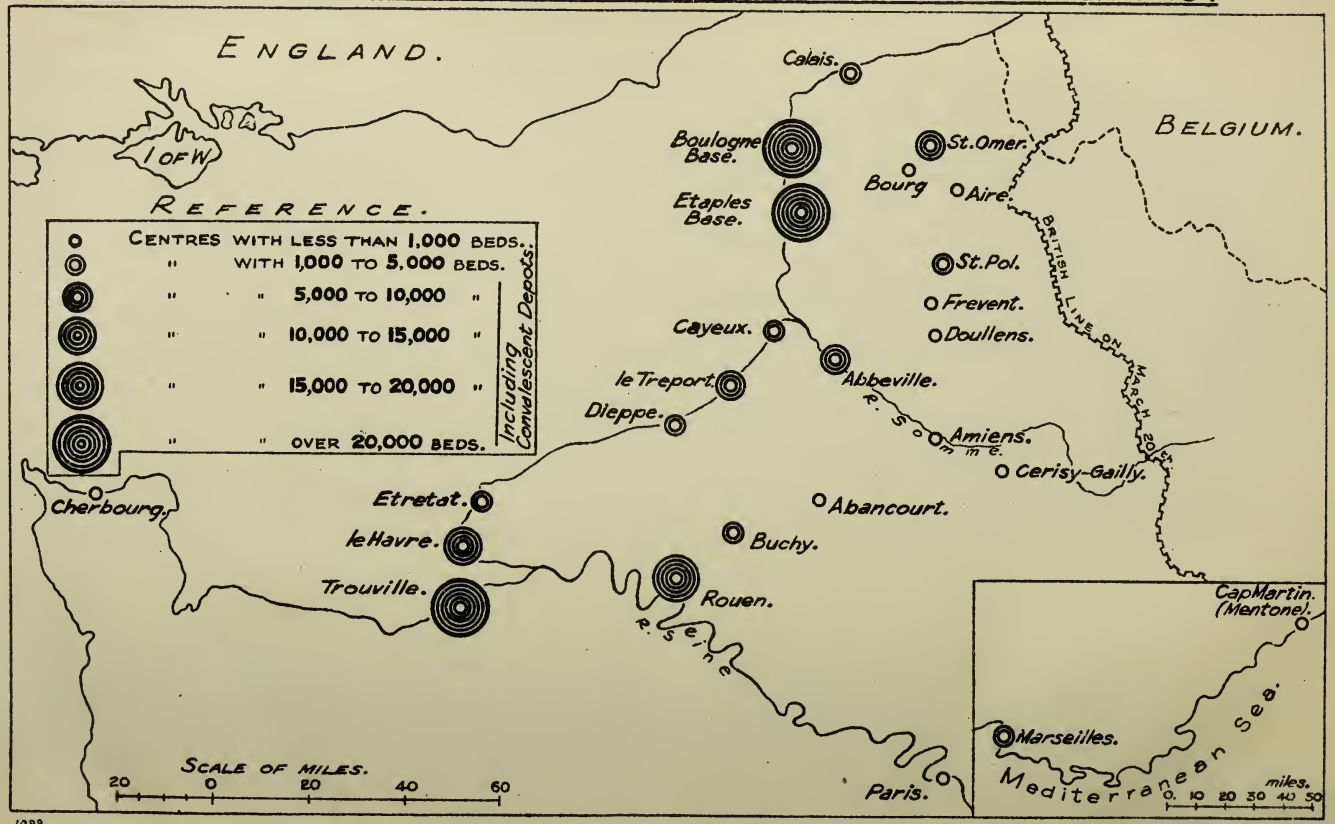
Map showing Hospital Centres on the Western Front in March 1918.



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in special wards at No. 13 Stationary (No. 83 General) Hospital in Boulogne, and *injuries of the face and jaw* also in the same hospital and in one of the hospitals in Etaples.

It was only for cases that had to be retained for treatment in France permanently or until free from infectiveness that special hospitals had to be organized. For other special cases evacuation to England as early as possible in order to set free accommodation for fresh cases was the rule, and was the only possible procedure without increasing the hospital accommodation to an enormous extent. In fact it was difficult to obtain permission from the French authorities to take up more buildings or sites as hospitals in France, as they held that the proper hospital zone for the British troops was the United Kingdom. They regarded the British lines of communication and base hospitals in the same light as their hospitals in the zone of armies and not as those in the interior of France.

Distribution of Hospitals in 1918.—The distribution of hospitals on the lines of communication in 1918 just before the commencement of the operations leading to victory is shown in the following table. It includes all the hospital centres which had been occupied by British units up to the time of the armistice, with the exception of those temporarily established during the retreat from Mons in 1914, when an Atlantic L. of C. was established, and the Amiens and St. Omer centres which had been lines of communication areas previous to the German offensive of 1918.

It will be seen from this that there were 48 general hospitals, 19 stationary hospitals, 5 other hospitals of a stationary or military character, 7 Red Cross hospitals and 6 native labour contingent hospitals on the lines of communication at that time, but in addition to these there were 8 stationary hospitals and one Red Cross hospital in army areas, namely, at Pont Remy No. 41 Stationary, at Doullens Citadel No. 3 Canadian (being withdrawn to Rouen), at Frévent No. 6 Stationary (being withdrawn to Fillièvres on the Frévent-Hesdin road), at St. Pol No. 12 Stationary, at Arques No. 4 Stationary, at Clerques No. 10 Stationary (withdrawn from St. Omer), at Desvres No. 39 Stationary (withdrawn from Fort Gassion, Aire), at St. Omer No. 1 New Zealand (at Bourg, near Wisques), and No. 9 B.R.C.S. Hospital at Longuenesse. There were also several small detention hospitals scattered over France for forestry, prisoners of war camps, for sick from convalescent depôts, coloured labour working in army areas, and isolated groups.

Distribution of Hospitals on the Lines of Communication, 1st August 1918.

Base Area	General Hospitals					Stationary Hospitals		Voluntary Hospitals	Native Labour Contingent Hospitals	Other Hospitals
	R.A.M.C.	Canadian	Australian	S.African	Indian	R.A.M.C.	Canadian			
Calais	Nos. 30 & 35.	—	—	—	—	—	No. 10	—	—	—
Dunkirk	—	—	—	—	—	—	—	Queen Alexandra's.	—	—
Boulogne	Nos. 7, 13, 14, 25, 53, 54, 55 & 83.	No. 3	No. 2	—	—	Nos. 7, 8, 14 & 32.	No. 2	Nos. 5 & 8.	No. 2 N.L. General Hospital.	—
Etaples	Nos. 4, 18, 20, 22, 24, 26, 51 & 56.	No. 7	—	—	—	Nos. 42 & 46.	No. 9*	—	—	—
Abancourt ..	—	—	—	—	—	Abancourt Stationary	—	—	—	—
Abbeville ..	—	—	No. 3	No. 1	—	No. 2	—	—	—	—
Dieppe	—	—	—	—	—	No. 5	—	—	No. 1 N.L. General Hospital.	—
Le Treport ..	Nos. 3, 16 & 47.	No. 2	—	—	—	—	—	No. 10	—	—
Rouen	Nos. 5, 6, 8, 9, 10, 12, 58† & 59.†	—	No. 1	—	Lahore (4 sections).	Nos. 1, 3, 11 & 25.	No. 7‡	No. 2	No. 4 N.L. Stationary.	—

Havre	Nos. 2 & 39.	—	—	—	—	Nos. 40 & 52.	—	—	No. 7 N.L. General Hospital.	—
Etretat	No. 1	—	—	—	—	—	—	—	—	—
Trouville.. ..	Nos. 72, 73 & 74.	No. 1§	—	—	—	—	—	‖No. 6 B.R.C.S. ¶St. J.A.B.	—	—
Marseilles ..	Nos. 57 & 81.	—	—	—	Lahore (2 sections).	Marseilles Stationary	—	—	No. 5 N.L. Stationary	—
Noyelles	—	—	—	—	—	—	—	—	No. 3 N.L. General Hospital.	—
Paris Area ..	—	No. 8	—	—	—	—	—	—	—	Paris Station Hospital.
Troyes	—	No. 6	—	—	—	—	—	—	—	—
Nancy (Charmes)	—	—	—	—	—	—	No. 8	—	—	—
Cherbourg ..	—	—	—	—	—	—	—	—	—	Cherbourg Military Hospital.
St. Germain au Mont d'Or.	—	—	—	—	—	—	—	—	—	St. Germain Mil. Hospital.

* No. 9 Canadian Stationary Hospital parked at Etaples.
† Nos. 58 and 59 General Hospitals parked at Rouen.
‡ No. 7 Canadian Stationary Hospital parked at Rouen.

§ No. 1 Canadian General Hospital preparing at Trouville
‖ No. 6 B.R.C.S. Hospital preparing at Trouville.
¶ St. J.A.B. Hospital preparing at Trouville.

Personnel of Hospitals.—There was considerable difficulty in maintaining a personnel for all these hospitals, more especially the personnel of medical officers. The United Kingdom had been more or less drained dry of members of the medical profession available for service overseas, the front line medical units and regimental medical services had to be maintained as near full strength as possible, and with the frequent casualties amongst their establishments had to be reinforced, at any rate temporarily, from the units on the lines of communication. Consequently from one cause or another the large hospitals at the bases were obliged to work with a much depleted or insufficient staff, especially during periods of crisis expansion and evacuation of large numbers of casualties from the army areas. In the latter part of 1915 the number of medical officers for the lines of communication amounted to over 150 short of that allowed in war establishments. In fact it was pointed out on the 6th December 1915 that the lowest working limit had been reached, that the total deficiency of medical officers in France was approximately 200 and the average wastage monthly about 50.

The matter had already been taken up by the Adjutant-General, who a month previously had asked the D.G.M.S. to consider the practicability of reducing the R.A.M.C. personnel both in units at the front and in units on the lines of communication. He enquired whether the war establishment of officers and other ranks could not be reduced without replacement, whether women or older and untrained men could take the place of trained men; and whether the number of hospitals, casualty clearing stations and other units could not safely be reduced. His point of view was that although a high standard of efficiency had been maintained up till then, a lower standard by a reduction of personnel might yet maintain a thoroughly efficient service that would compare favourably with that of other nations. A committee under the presidency of the D.M.S., L. of C., had met at the office of the D.G.M.S. on the 27th November 1915 to consider the Adjutant-General's proposals, and although certain reductions in establishments of medical officers in field ambulances, motor ambulance convoys and ambulance trains were then proposed, they were only sufficient to give what was considered as a necessary increase to casualty clearing stations. The medical personnel was already greatly below war establishments and there seemed little hope of their being maintained up to strength.

This condition of affairs continued throughout the war. Thus in March 1916 the authorized war establishment of the general and stationary hospitals on the lines of communication, without allowing for their expansion, was 849 medical officers and 6,580 other ranks, but the actual strength at the time was only 668 medical officers and 6,366 other ranks. Again, in February 1917 there were 212 officers short of war establishments.

Every kind of device was resorted to in order to maintain the hospitals in working order. Complaints had been frequent regarding the medical officers in front areas, especially those

Base Duty Men acting as Stretcher Bearers at Boulogne.

with battalions, having little or nothing to do ; but most of these complaints came from officers who had not fully realized the extent of work which they might do even in the quietest times ; and it was obvious that a serious breakdown would occur were the front line units depleted in times of less active operations, on the assumption that they would become efficient when the emergency of battle burst upon them.

It was therefore always impossible to consider reduction of front line units, but as already noted, the war establishments of casualty clearing stations were never increased notwithstanding their great expansion and work during active offensives. The field ambulances, however, were reduced by one medical officer each in the last year of the war, and

a proposal was being considered for a still further reduction by granting commissions to R.A.M.C. from the ranks to act as officers of the bearer divisions. The number of R.A.M.C. officers with motor ambulance convoys and ambulance flotillas was also reduced, and, as already noted, a medical officer was replaced by a quartermaster R.A.M.C. in command of advanced depôts of medical stores ; but otherwise no reduction could be made in the establishment of units in army areas.

But on the lines of communication an establishment for expansion of hospitals was agreed to on the basis of one medical officer and five other ranks for every 100 beds over

Loading a Hospital Ship at Boulogne.

the normal accommodation. It was considered preferable to expand existing hospitals in this way instead of adding to the number of hospital beds by new hospital units. The deficiency in other ranks was made good by attaching to the hospitals for general duty men of other branches of the service permanently unfit for duty in the line—P.B. or permanent base men, as they were designated. Again, in view of the fact that, except in periods of battle, the number of vacant beds amounted to between 30,000 and 40,000, the D.G.M.S. considered that it would be sufficient to keep the strength of officers about 30 per cent. below the *pro rata* scale and ask for the balance only when the necessity arose. But owing to the difficulty of obtaining a large number of medical

officers from England in an emergency it was decided that a 10 per cent. permanent reduction only of the *pro rata* scale should be considered.

War establishments were then issued from time to time showing an authorized establishment for general hospitals of 1,040, 1,560 and 2,500 beds. The establishment for a 1,040-bed general hospital in September 1916 was 32 medical officers, 2 quartermasters, 3 chaplains, 73 nursing staff and 206 other ranks, but the medical officers and other ranks were reduced to 25 and 162 respectively in October 1918. In September 1917 the 1,560-bed general hospital was given an establishment of 32 medical officers, 2 quartermasters, 78 nursing staff and 218 other ranks, reduced in October 1918 to 194. A general hospital of 2,500 beds appeared in war establishments for the first time in July 1917, with 40 medical officers, 2 quartermasters, 125 nursing staff and 286 other ranks. In October 1918 the medical officers were increased to 41, but the other ranks were reduced to 262.

The establishments of the Canadian general hospital were on a more liberal scale. A hospital of 1,040 beds commenced with 34 medical officers and 101 nursing staff, and had 2 dentists, a paymaster, 3 chaplains, 2 quartermasters and 204 other ranks. When the unit expanded there was an automatic increase of 1 medical officer, 4 nursing sisters and 11 other ranks for every additional 100 beds. When the expansion reached 500 extra beds, a third dentist with 2 dental orderlies was added, and with a 1,000 bed increase an additional paymaster, quartermaster, 2 pay clerks, and 2 other ranks for quartermaster duties. Provision was also made for automatic decrease for every 100 beds below 1,040 in the same proportion as the automatic increase.

The 400-bed stationary hospital of the R.A.M.C. had 16 officers, a quartermaster and 3 chaplains, 27 nursing staff and 123 other ranks, reduced to 103 other ranks in 1918. The Canadian stationary hospital of 400 beds had the same number of officers, with a dentist added, 41 nursing staff, and 120 other ranks, but with automatic increases of 2 medical officers, 9 nursing staff and 11 other ranks for every 100 beds added to the unit, and when a Canadian stationary hospital expanded to 1,000 beds it was given the same establishment as a general hospital.

The deficiency in personnel for the British hospitals at the bases was greatly relieved in 1917 by six of the general hospitals being taken over each by a complete unit organized

for the purpose by the United States Army Medical Corps.* But two voluntary units from the United States, one a Harvard and the other a Chicago unit, had been accepted by the Army Council for duty with the British medical service in France in July 1915. These units consisted of a number of physicians, surgeons and nursing sisters sufficient to staff a general hospital each. They were placed under the command of officers of the R.A.M.C., the Harvard unit staffing No. 22 General Hospital at Dannes Camiers, near Etaples, and the Chicago unit No. 23 General Hospital at the same place. They were paid by the British authorities at the same rate as the equivalent ranks in the R.A.M.C. and Q.A.I.M.N.S. These voluntary staffs were replaced from time to time and continued to serve at No. 22 and No. 23 General Hospitals, the Harvard unit to the end of the war and the Chicago unit till the latter part of 1916, when No. 23 General Hospital was taken over by No. 7 Canadian General Hospital and ceased to retain its R.A.M.C. designation.

Convalescent Depôts.

Convalescent depôts were not established to any great extent in the earlier months of the war on the lines of communication, although methods of retaining convalescents and slight cases of sickness and injuries in divisions, corps or army areas were gradually being evolved in order to avoid their being lost by evacuation to the base. But it became in time imperative to relieve the congestion of the hospitals on the lines of communication by other means than by evacuation to the United Kingdom, in order to avoid general loss of man-power. The policy of evacuating as few patients as possible to England was always being impressed upon the D.G.M.S. both by the Adjutant-General and by the D.G.A.M.S. at the War Office ; and this, combined with the rapid reduction of the number of vacant beds in the base hospitals to meet battle contingencies when the danger to hospital ships became greatly increased by intensive submarine warfare, led to an extensive expansion and organization of convalescent depôts.

Only one convalescent depôt was mobilized when the expeditionary force went to France in 1914. It was organized to accommodate 1,000 with a staff of two medical officers, a quartermaster and three other ranks ; but at the end of 1914

* See Vol. I, Medical Services—General History, p. 147 *et seq.*, for details of these units.

a stationary hospital, No. 4, took over a large jute factory at St. Omer for the reception of convalescents from army areas. The organization of this stationary hospital as a depôt for convalescents marked the commencement of an evolution in the organization of convalescent depôts in France equal in importance to the evolution of the casualty clearing stations. No. 4 Stationary Hospital was moved at the beginning of April 1915 from the jute factory to a distillery and large field at Arques, some three miles out of St. Omer, where it reopened under canvas a few weeks later.

Convalescents at exercise in a Convalescent Depôt.

Convalescent depôts on the lines of communication increased rapidly in number, and by July 1915 there was a convalescent depôt for British sick and wounded at Boulogne, Wimereux, Rouen, Havre, Etaples, Dannes Camiers, and Le Treport, and for Indians at Boulogne and Marseilles. They were, however, organized chiefly to relieve the congestion in hospitals and to treat, until fit for duty, the patients sufficiently recovered to be passed on to them.

It was not until 1917 that a new type of convalescent depôt with accommodation for 2,000 to 5,000 was organized with special arrangements for the hardening of the convalescents by means of a definite scheme of physical and military training. These new depôts consisted of a headquarters and two or more

divisions of 1,000 men in each ; a division being divided into four companies of 250 men each. The headquarters consisted of a Lieut.-Colonel or Colonel, R.A.M.C., in command, who had with him a captain, R.A.M.C., a dental surgeon, an adjutant, a duty officer and a quartermaster, three warrant officers and 48 other ranks. Each division had in addition a major or captain, R.A.M.C., in command, one duty officer, six warrant officers and nine other ranks ; the warrant officers acting as physical and bayonet training instructors. A convalescent depôt for 4,000 or 5,000 had an extra officer for physical and bayonet training added to the headquarters staff, and additions were made to the rank and file of depôts of 3,000, 4,000 and 5,000 capacity. There was also a small staff for duty in a detention hospital, which formed part of the depôt.

In all, fourteen convalescent depôts for British other ranks, in addition to one for Australians and one for Indians, were open in 1918 with a total accommodation, including crisis expansion, for over 60,000 at the time of the advance to victory. The chart shows the gradual expansion of this accommodation from 1916 onwards.

The distribution of these units in July 1918 is shown in the following table :—

No. of Convalescent Depôt.	Locality.	Normal Accommodation.
No. 1	Havre	3,000
No. 2	Rouen	4,200
No. 3	Le Treport	2,200
No. 4	Havre	3,000
No. 5	Cayeux	5,000
No. 6	Etaples	2,500
No. 7	Boulogne	2,900
No. 9 (Indian)	Marseilles	500
No. 10	Boulogne	5,000
No. 11	Rouen	5,000
No. 12	Boulogne	5,000
No. 13	Trouville	5,000
No. 14	,,	5,000
No. 15	,,	5 000
No. 16	Marseilles	2,090
No. 1 Australian	Havre	2,000

There were also convalescent depôts for prisoners of war at Havre, and for Indians at Rouen.

In addition to these depôts there were convalescent homes for officers, nursing sisters, Queen Mary's Army Auxiliary Corps, and Canadian officers. A home for 200 convalescent officers

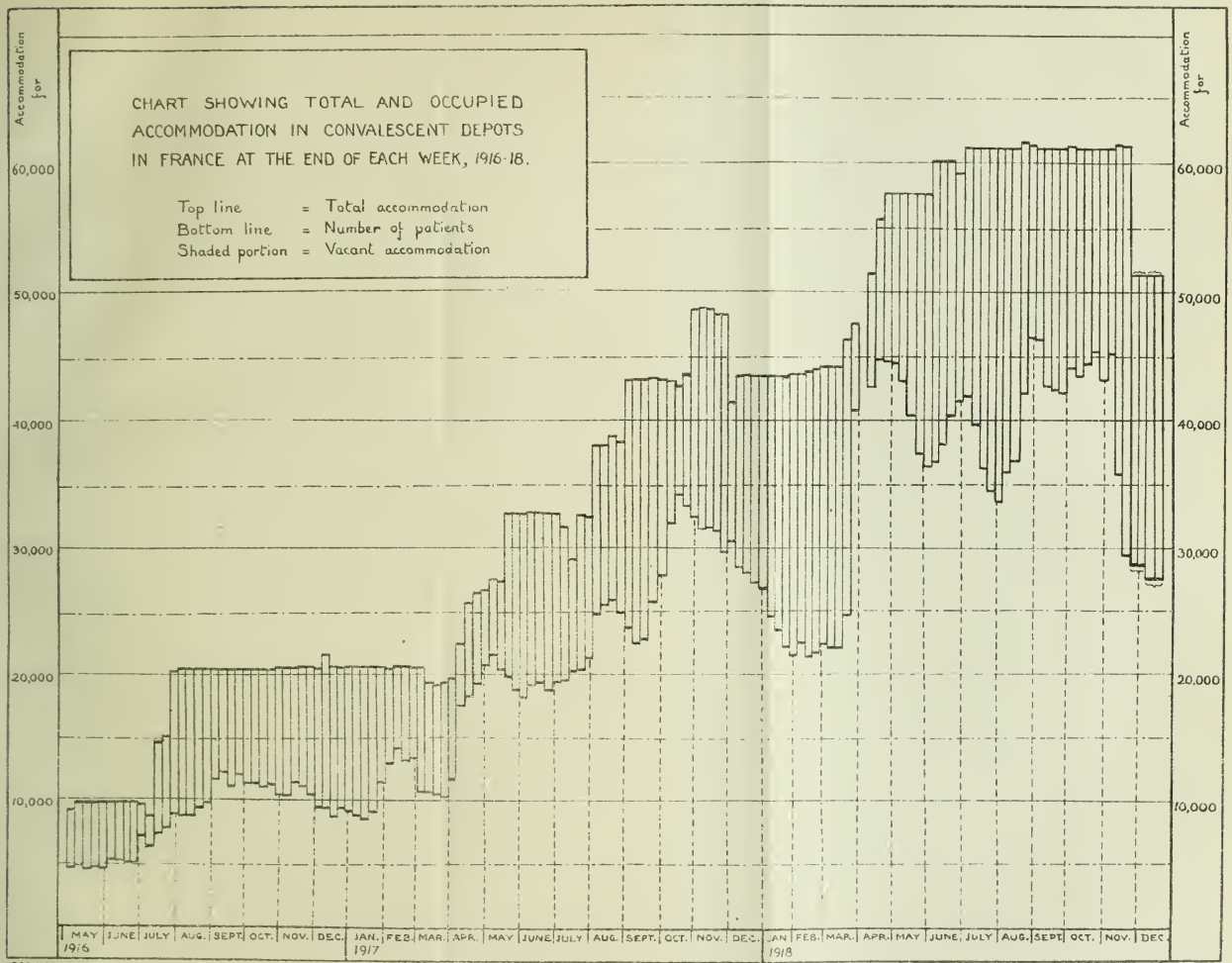
CHART SHOWING TOTAL AND OCCUPIED ACCOMMODATION IN CONVALESCENT DEPOTS IN FRANCE AT THE END OF EACH WEEK, 1916-18.
Top line = Total accommodation
Bottom line = Number of patients
Shaded portion = Vacant accommodation
Accommodation for
60,000
50,000
40,000
30,000
20,000
10,000
MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC
1916
1917
1918

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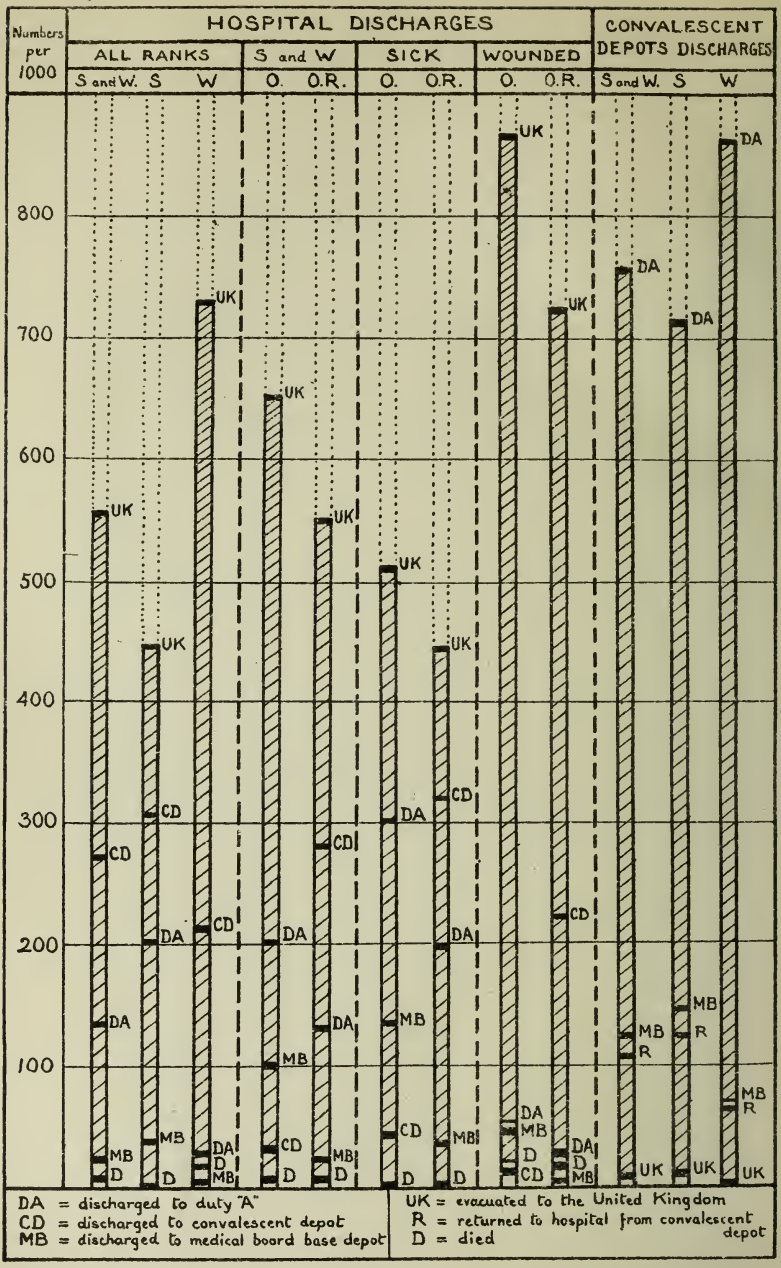

CHART. *Showing the disposal of patients from hospitals and convalescent depôts in France. The columns represent the proportion per 1000 admissions according to each method of disposal during 1917.*

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was maintained by Lord Michelham in summer at Dieppe, in the winters of 1914–15 and 1915–16 at Cimiez, and in the subsequent winters at Cap Martin, Mentone; for nursing sisters there was a home with twenty beds at Hardelot organized by H.R.H. Princess Louise, Duchess of Argyll, and for the Women's Army Auxiliary Corps also at Hardelot and Etretat. There were also other convalescent homes for nursing services and women workers.* These homes were given a definite staff of R.A.M.C. and nursing sisters. The Canadian officers' convalescent home was at Trouville.

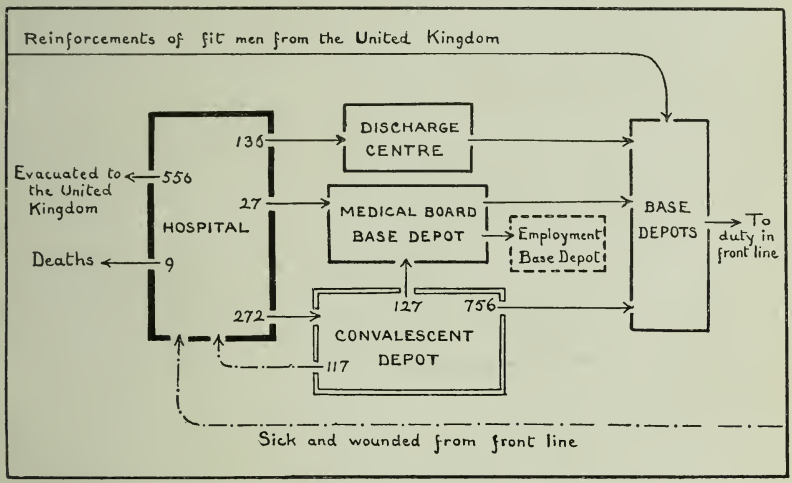


Diagram showing disposal of sick and wounded received into hospitals and convalescent depôts on the lines of communication in France. The numbers indicate the proportion per 1,000 admissions into hospitals and convalescent depôts in 1917.

A general idea of the effect of this system of saving man-power by means of organized convalescent depôts may be gathered from the above diagram and chart. The diagram shows the inflow of sick and wounded from the army areas to the base hospitals, and the proportionate outflow from the hospitals to the United Kingdom, to convalescent depôt, to duty direct, to employment at the base, or by death during the year 1917 for every 1,000 admitted, with a similar proportionate disposal of every 1,000 sent to convalescent depôts from the hospitals. The chart shows these proportions for all ranks, officers and other ranks, and sick and wounded separately.

* See Chapter VII.

It will be seen that about half the admissions to hospital were evacuated to the United Kingdom, and about one-quarter were discharged to convalescent depôts, the remaining quarter being discharged direct to duty or to employment at the base ; while three-quarters of those admitted to convalescent depôts were discharged to duty. A number, however, had to be returned to hospital, chiefly because in time of pressure many of the slighter cases requiring hospital treatment were sent to convalescent depôts temporarily in order to set free beds in the hospitals for more serious cases.

In July 1918 twenty-one battalions arrived in France from Salonika, with a large proportion, varying from 50 to 95 per cent., of the men suffering from malaria. It was considered that two months would be required to render them fit for duty. A camp for malaria patients was consequently organized at Serqueux, in the Abancourt area. The men were placed under special medical treatment, as well as physical and military training. The camp was arranged to accommodate 7,000, and consisted of a brigade headquarters and seven groups of 1,000 each, in companies of 250. A Lieut.-Colonel, R.A.M.C., was attached to the headquarters, and a medical officer to each of the groups. In two months' time the men were restored to health and fitness and able to take their place in the line.

Hospitals for Nursing Sisters.

In March 1918 there were six beds reserved at No. 10 Stationary Hospital, St. Omer, for serious cases amongst nursing sisters doing duty in casualty clearing stations in the First and Second Army areas. All other cases of sickness amongst the nursing staff were to be accommodated in No. 14 General Hospital, Boulogne. At that time there were fourteen beds for them in the Hôtel Splendide, a section of No. 14 General Hospital, at Wimereux, but frequently there were as many as twenty-three sick sisters, which meant appropriating officers' rooms for their accommodation. The Château Mauricien, at Wimereux, was then appropriated entirely for sick sisters, giving accommodation for twenty-seven beds, or thirty if necessary. There was a good garden and lawn at the Château Mauricien, and convalescent sisters could be sent to convalesce there instead of being sent to Hardelot or England.

Later on, in November 1917, on the arrival of the W.A.A.C., further accommodation was demanded, and the number of patients accommodated in the Château Mauricien steadily

increased. The D.M.S., L. of C., consequently, in view of the large number of nursing sisters employed in the Boulogne area, considered that it would be inadequate during the ensuing winter, and recommended that huts for an additional twenty beds which could be conveniently placed in the château grounds should be provided. The actual beds then available for nursing sisters and W.A.A.C. officers at the Château Mauricien was forty-five, frequently all the beds were occupied, and nursing sisters and W.A.A.C. officers had, on occasions, to be placed in the wards in the general hospital. A hut for an additional twenty beds at No. 14 General Hospital was consequently agreed upon, to be provided by the military authorities. This was the chief hospital for nursing sisters. Details of other hospital provision for them are given in Chapter VII.

CHAPTER IV.

THE MEDICAL SERVICES WITH ALLIED CONTINGENTS AND SPECIAL CORPS.

FRENCH, Portuguese and American troops were incorporated at one time or another with British formations on the Western front, and their medical services came to a certain extent under the administration of the directorate of the British Medical Service of the army to which they were attached.

Special medical services were also organized for duty with the Royal Air Force, with the Tank Corps, and Tunnelling Companies, while the contingents from the dominions of Canada, Australia, New Zealand and South Africa had their own special medical services. The medical services of the Indian contingent were organized in accordance with Indian Army regulations.

The medical arrangements for French formations attached to British armies and for British formations with French armies are described in those chapters which deal with the operations concerned. Generally, each nationality worked on its own lines, but local arrangements were made for the reception of French sick and wounded into British medical units or of British into French units, and, as already noted, an officer was appointed early in the war to trace the whereabouts of British wounded who had found their way into French hospitals in the interior. When British formations fought in French sectors and French in British sectors in 1918 the liaison was regulated by the Ds.M.S. of the armies concerned and by the D.G.M.S. at G.H.Q.

Medical Services with the Portuguese Contingent.

A Portuguese Expeditionary Force consisting of two divisions with corps troops and base details joined the British forces in France in 1917 and formed part of the British First Army. The first of the two divisions began to disembark early in the year and arrived in the First Army area on the 9th February 1917. It occupied the billeting areas south-west of Aire and was attached to the XIth Corps. After a period of training it went into the line in the latter half of June, taking over the sector then occupied by the 49th Division opposite the Rue

Tilleloy in the Neuve Chapelle sector of the front. The second division arrived later and was then in support of its first division. The Portuguese troops continued to occupy this sector until driven back by the German offensive of the 9th–11th April 1918, when the corps was withdrawn to Ambleteuse in the Boulogne area. The corps was then reorganized under the British First Army command.

Previous to the arrival of Portuguese troops in France a Portuguese Medical Mission visited the British area in France and had an interview with the D.G.M.S. at Hesdin on the 27th and 28th December 1916, when information was obtained regarding the general organization of the Portuguese Medical Service. It differed considerably from the British organization. Each battalion of infantry had three medical officers with equipment for forming aid posts and advanced dressing stations ; and, in addition, there was a senior medical officer with each regiment of three battalions, following more or less the Continental system. The divisional medical units were organized in three echelons, namely horsed ambulance transport columns, field ambulances and hospital columns. There were two horsed ambulance columns for a division, each consisting of eight carts for baggage and twelve ambulance wagons taking two lying or eight sitting patients. These columns were the equivalent of the British bearer divisions and had a personnel of three medical officers, a supply officer and 122 other ranks. The field ambulances were the equivalent of the British tent divisions, and had a personnel each of 8 medical officers, 2 other officers, and 84 other ranks. Five were mobilized with the division. The hospital columns were the equivalent of the French *sections d'hôpitalization* and in fact formed part of the field ambulance, as they were the sections which carried hospital equipment and material for the formation of more permanent main dressing stations or hospitals in the divisional area. There were three for each division, the material, of which there were twelve tons in each column, being carried in motor lorries.

Casualty clearing stations and a motor ambulance convoy were included in the organization, but the former did not arrive in France and were eventually formed by one or more of the field ambulances, and the latter was composed of thirty-two motor ambulance cars obtained from British sources after the arrival of the divisions in the First Army area.

In addition to these units each division had a sanitary and bacteriological unit, which was a large unit for sanitary

and laboratory work generally. The sanitary section was composed of one officer and 287 men, the bacteriological section of 3 officers and 13 other ranks.

Orders had been placed in England for a mobile X-ray laboratory, mobile hygiene and bacteriological laboratories, a water sterilization equipment and a mobile operating theatre, none of which arrived until 1918.

For the lines of communication the intention was to form a stationary hospital of 300 beds for the sick of the reinforcement base, a general hospital of 1,000 beds for sick and wounded from the army area, a convalescent camp and a repatriation station. A base and an advanced depôt of medical stores were also included in the organization.

This general organization, however, fell short of the original intention of the Portuguese. After the first Portuguese division had come into the XIth Corps area, the D.D.M.S. of the corps reported at the end of March that it had only one complete field ambulance. A second field ambulance had half its personnel and no equipment, and the remaining field ambulances had not arrived. There was only one of the horsed ambulance columns. Its equipment was incomplete. The sanitary section was incomplete as regards personnel and was without equipment. The bacteriological section had not arrived ; nor had any of the hospital columns or the motor ambulance convoy arrived. However, in July, when the Portuguese division had taken a definite place in the line with other divisions of the First Army, it had three field ambulances with it and a fourth opening in Merville as a casualty clearing station, two horsed ambulance columns, three hospital columns, one of which supplied the equipment for the casualty clearing station, and a motor ambulance convoy with twenty-eight of its full complement of thirty-two cars. When deficiencies were made good and the horsed ambulance columns of a division reorganized to consist of a total of twenty-one motor ambulance cars and nine horsed ambulance wagons, a definite organization of field medical units was agreed to and the following was then drawn up by the D.M.S. of the First Army and the D.M.S. of the Portuguese Expeditionary Force :—

Corps Troops.

1 field ambulance	1 mobile dental section
1 hospital column	1 ,, bact. laboratory
1 ambulance column (M.A.C.) of 32 cars	1 ,, hygiene laboratory
2 mobile X-ray units	1 sanitary section
2 ,, operating units	1 Clayton disinfector
	1 Thresh disinfector

1st Division.	*2nd Division.*
4 field ambulances	4 field ambulances
1 ambulance column	1 ambulance column (as 1st Dn.)
21 motor ambulance cars	2 hospital columns
9 horsed ambulance wagons	1 Foden disinfector
2 hospital columns	1 Thresh disinfector
1 Foden disinfector	
1 Thresh disinfector	

A casualty clearing station was to be formed for each division by one of the field ambulances and hospital columns together with the Thresh disinfector.

The two casualty clearing stations thus formed were opened at Merville and St. Venant, the former in August 1917 and the latter towards the end of the year. Up till then Portuguese sick and wounded were received into First Army casualty clearing stations, chiefly into No. 51 Casualty Clearing Station in Fort Gassion, Aire. By the time of the German offensive in April 1918 only fourteen motor ambulance cars had arrived for the divisional ambulance columns, and there were other deficiencies in the corps medical units, but the corps motor ambulance column, as already stated, had its full complement of thirty-two cars.

After the offensive the Portuguese Corps was withdrawn to Ambleteuse, near Boulogne, and at that time thirty-two of the total of forty-six motor ambulance cars with it were in workshops and under repair. The field medical services had then to be reorganized. It was arranged that the medical services in the army area should consist only of three sections of a field ambulance to be attached as extra sections to British field ambulances, and that a small Portuguese unit should be attached for duty to No. 39 Stationary Hospital, then in Fort Gassion, Aire. All other personnel and material were to be sent to the Portuguese hospitals at the base, to which Portuguese sick and wounded would be evacuated by British ambulance trains.

The arrangements on the lines of communication and base were even less advanced than those in the army area by the end of 1917. The port of disembarkation was Brest, where an embarking medical officer of the R.A.M.C. was stationed to inspect the troops on arrival. The sick were classified into those unfit for further service, those requiring hospital treatment before proceeding to the base depôt and those fit to continue the journey to the depôt. Accommodation for 100 of the sick was provided by the French authorities in the

Hôpital de Marine. In April a camp for 1,000 was formed on the *Plaine de Kermangoff.* The chief difficulty at Brest was the sanitary condition of the transports after the troops disembarked. The decks had become very foul owing to lack of sanitary discipline, and this was a constant complaint throughout the war. The French medical authorities assisted in arranging for the disinfection of 2,000 of the blankets from the transports daily. Many cases of venereal disease existed amongst the troops on disembarkation. They were sent to the British venereal hospital at Etaples, and the officers to the British venereal hospital at Havre. Provision was also made for a hospital of 300 beds at Brest in May 1917, but apparently it did not materialize.

Brest continued to be the port of disembarkation, and also the port from which sick and wounded were repatriated to Portugal. In 1918 a considerable number of cases of mumps arrived at Brest, and early in March the outbreak of an epidemic of typhus in Oporto and other places in Portugal was notified. Steps were then taken in conjunction with the French authorities to establish a quarantine station for Portuguese arriving at Brest on the island of Treberon, where troops arriving were kept in quarantine for fourteen days before being permitted to proceed up country. These quarantine arrangements were continued until the end of the war, but when the American troops began to arrive at Brest in 1918 there was considerable dislocation of the arrangements, especially as a serious epidemic of influenza had broken out in the autumn of that year amongst Americans landing there, and also amongst the French soldiers and sailors. A proposal was then made by the Portuguese to open a 130-bed hospital on the Spanish frontier at Hendaye, but this proposal was not carried out. A proposal was also made in August 1918 to station a Portuguese field ambulance at Brest, but this, too, fell through, as it was considered that the Portuguese medical personnel there was sufficient.

With regard to the repatriation of invalids from France to Portugal from Brest, there were many difficulties and many complications. In May the procedure agreed to was to repatriate by hospital ships or by returning transports. Hospital ships sailing from Avonmouth to the Mediterranean were to call at Brest to take invalids to Lisbon and notification of the sailing of any such ship was to be made by the War Office in London to G.H.Q. in time for the D.M.S., L. of C., to bring the invalids from the hospitals up country to Brest

for embarkation. In the event of the running of hospital ships being suspended, the naval transport officer at Brest was to notify to the D.M.S., L. of C. the date of the departure of any returning transports, if possible, not less than seven days previous to the date of departure, and the D.M.S., L. of C., was then to make arrangements for the transfer of invalids to Brest in time to embark. The responsibility for making medical arrangements on the voyage rested with the Portuguese authorities.

These arrangements were notified by the A.G. to the War Office on the 19th May 1917, but in several instances the timing of the arrival of invalids at Brest and the departure of transports or hospital ships did not coincide, and difficulties arose. Again, when large numbers of transports were taken up for conveying the American troops to France the number of transports available for the Portuguese was extremely limited, and only two small ships were then carrying Portuguese reinforcements to Brest, and these usually had to sail from Brest to England on the return journey in order to obtain coal and other necessaries. There were at that time some 700 Portuguese invalids awaiting evacuation to Portugal, of whom 400 were cases of tuberculosis. These facts were notified to the War Office on the 19th February 1918, and as a result the " Glenart Castle " and the " Glengorm Castle " were ordered to touch at Brest on their way to the Mediterranean in order to repatriate these invalids to Portugal. Unfortunately, the " Glenart Castle " was sunk on its way to Brest on the 26th February 1918. The " Glengorm Castle " sailed at the beginning of March and returned from Lisbon a second time to Brest before continuing its voyage to the Mediterranean.

The Portuguese reinforcement base was at first established in the Etaples area, where camps were organized at Rang du Fliers, near St. Jossé, on the Berck Road, the headquarters being at Le Touquet. There were, however, no Portuguese hospital units at any time there, but 500 beds of No. 18 General Hospital at Dannes Camiers were allotted to the Portuguese, and Portuguese personnel were distributed to Nos. 4, 24 and 26 General Hospitals at Etaples, while the venereal patients, who formed the majority of the Portuguese sick, went to No. 51 General Hospital at Etaples.

Preparations were then made for establishing a general hospital of 1,500 beds with a personnel of 37 officers and 340 other ranks, a venereal hospital of 1,000 beds with 26 officers and 210 other ranks, and a convalescent depôt of 1,000 beds

with 7 officers and 72 other ranks. The site selected in February 1917 was at Rang du Fliers. None of these hospital units, however, were established in the Etaples area.

Proposals were made at the end of April 1917 to move the Portuguese depôts to Ambleteuse, and work commenced on accommodation for the medical units at Ambleteuse later in the year by Portuguese engineers. In August 1917 the number of medical officers at the Portuguese base was 33, with 5 apothecaries, 2 administrative officers, 2 quartermasters, and 62 other ranks. A statement of the requirements to establish the three medical units as above was submitted to the War Office on the 27th October 1917. The construction of the hospitals, however, proceeded slowly, and they were not opened until March 1918, the venereal hospital having been completed some weeks earlier. There were then three Portuguese hospitals at Ambleteuse, under the administration of the D.D.M.S. of the Boulogne area. These three hospitals were a Portuguese Red Cross Hospital to which officers were sent, the Portuguese General Hospital, and the Portuguese Venereal Hospital. These units remained at Ambleteuse until the end of the war.

When the Portuguese Corps was withdrawn after the German offensive of April 1918 to Ambleteuse, the camps were not sufficiently large for the total number of troops which had to be accommodated in them, and a camp for some 3,000 was established at Cherbourg, where one of the Portuguese field ambulances was opened as its medical unit.

Twenty-four nursing sisters were sent from Portugal at the end of 1917 for duty in the Portuguese General Hospital, and were attached for a time to British hospitals to gain experience until their own hospital was ready. British nursing sisters were also posted for duty to the Portuguese General Hospital, and a British liaison officer, Captain Barton, R.A.M.C., was attached to the hospital to assist them at the end of April 1918.

With regard to the sanitary arrangements of the Portuguese base as well as in the front area, a considerable amount of instruction was given both by the First Army sanitary officers and the sanitary officers on the L. of C. Sanitary instructions in force with the British troops had been translated into Portuguese as early as the 21st December 1916, but it was often very difficult to maintain a high standard of sanitation in some units. When the camps were formed at Ambleteuse and the Portuguese Corps was reorganized, the Portuguese sanitary

section went to the base with the corps, but for some time the sanitary arrangements were far from perfect, and a definite distribution of sanitary duties had to be organized for camp areas. In July Captain Lodwidge, R.A.M.C., was placed in sanitary charge of the camp and a permanent sanitary organization was formed. To each camp, one N.C.O. and ten other ranks were allotted for charge of the incinerators, one N.C.O. and four other ranks for the latrines, and one other rank for each lavatory.

Inoculation against enteric fever had to be carried out after the troops arrived in France, as also vaccination against smallpox, many of the men not having been re-vaccinated since infancy.

In addition to the expeditionary force for combatant service, arrangements were made for a Portuguese railway construction battalion and four unskilled labour battalions to be sent from Portugal for service in France, and Major W. Best, the Assistant Inspector of Drafts at Boulogne, was detailed to proceed to Lisbon on the 10th March 1917 to conduct the final medical examination. The organization of these railway battalions was on the same lines as that of a British labour battalion, and a good physical standard was demanded.

At the end of June 1918, 1,200 Portuguese workmen were sent overland to England via Hendaye and Havre, and Captain Harmer, R.A.M.C., was sent to Hendaye to inspect them on arrival at the French frontier, and to make arrangements for segregating and disinfecting them before they entered France.

With regard to the medical and surgical stores, the General Officer Commanding the Portuguese Expeditionary Force represented to the British authorities that the medical and surgical stores in Portugal had been practically exhausted by the requirements of the Portuguese troops in Africa, and asked that he might count upon supplies being obtained from British medical supply depôts for the Portuguese Expeditionary Force. These facts were communicated to the War Office on the 29th April 1917, and arrangements were made for the issue of medical and surgical supplies from British medical depôts in France on demand. The medical and surgical supplies for the troops in the field were drawn from No. 3 Advanced Depôt of Medical Stores at St. Omer at first, and a Portuguese medical officer was appointed to No. 2 Base Depôt of Medical Stores, Calais, in order to become acquainted with the nature of the material held by the British. A

Portuguese medical officer was also sent to London to arrange for the supply of any special medical stores required by Portuguese medical officers. These arrangements held good during the war for the supply of medical and surgical stores to the Portuguese.

It will be seen from the above brief account of the medical arrangements of the Portuguese Expeditionary Force that the British medical services were involved to a large extent in dealing with the Portuguese sick and wounded, especially during 1917 before the Portuguese medical services had been completed to any adequate extent.

The Portuguese medical officers, especially those who were specialists, were keen and efficient, but they were much hampered by the delay in obtaining their full equipment and their complete medical units. They were in close liaison with the D.M.S. of the First Army, and with the D.D.M.S. of the Etaples and Boulogne bases, with whom there was constant co-operation throughout.

American Medical Services.

In the first volume of the General History of the Medical Services considerable reference has been made to the assistance given to the British medical services in France by the medical services of the United States of America, but the details noted there do not fully indicate the extent to which the Medical Corps of the United States Army from the summer of 1917 onwards until the end of the war was associated with, and in fact may be stated to have been amalgamated with, the R.A.M.C. on the Western front. Not only the base hospitals, details of which are given in the first volume, but also divisional medical units of the U.S.A. came under the administration in the field of the British army medical service.

In April 1917 the United States Secretary for War sanctioned the despatch of the personnel for six general hospitals to work as complete U.S.A. units on the British lines of communication, each hospital having a personnel of 23 medical officers, 50 nursing sisters, and a complete establishment of N.C.Os. and men. It was stipulated that each unit should fly the American flag along with the British and that the personnel should wear the uniform of the United States army and be paid by the United States Government.

Arrangements were consequently made in France for each unit as it arrived to replace the equivalent of personnel of one

of the general hospitals of a British base, leaving at first the R.A.M.C. administrative staff in charge until the U.S.A. unit was in a position to take over the entire charge itself. A conducting party of the officer commanding the general hospital selected to be taken over by each unit, together with his serjeant-major and six N.C.Os., was ordered to meet each of the U.S.A. units as it arrived at Liverpool, and conduct it to its position in France. The first conducting party left No. 9 General Hospital, Rouen, on the 11th May 1917 and brought over No. 4 U.S.A. unit from Cleveland University on the 24th May and disembarked it in France on the

No. 9 General Hospital, Rouen.

25th May 1917. This unit then took over the duties in No. 9 General Hospital. It was followed by a unit from Harvard University, which took over No. 11 General Hospital at Dannes Camiers, and in succession came the Presbyterian Medical School Hospital, which went to No. 1 General Hospital at Etretat, the St. Louis University unit, which went to No. 12 General Hospital, Rouen, the Philadelphia University unit, which went to No. 16 General Hospital, Le Treport, and the Chicago Medical unit, which took over No. 18 General Hospital at Dannes Camiers, this last unit arriving in France on the 11th June 1917.

All these units had been highly organized and trained during peace by the American Red Cross Society, but in accordance

with the American regulations they ceased to be Red Cross units when mobilized for war. They then became units of the Medical Corps of the United States Army, the officers being given commissions in it, and the sisters and nurses commissions in the Army Nursing Service, while other ranks were enlisted. They severed their connexion entirely then with the Red Cross Society, and all the personnel had to be approved by the Army Medical authorities, both mentally, physically and professionally, before the unit was mobilized. As, however, on arrival in France they were not subject to the British Army Act or King's Regulations, there was a dual control in each of these hospitals, the British patients and R.A.M.C. personnel being under the command of the R.A.M.C. officers left in the hospital, and the U.S.A. personnel or patients under the command of the U.S.A. commanding officer. On the 1st August 1917 the R.A.M.C. officer commanding the unit was withdrawn so as to give the officer commanding the U.S.A. unit full responsibility, but an officer of the R.A.M.C. not above the rank of major was left to act as liaison officer, registrar and commandant of R.A.M.C. personnel and patients under British military discipline, as also a quartermaster of the R.A.M.C. and the necessary quartermaster's staff for charge of the British stores and equipment.

All these six U.S.A. base hospitals remained with the British in the British general hospitals to which they had been allotted on arrival in France until the end of the war, with the exception of the Harvard unit, which removed from No. 11 General Hospital at Dannes Camiers to No. 13 General Hospital in the Casino at Boulogne when the former hospital was transferred to Italy at the end of 1917.

In October 1917 the question was raised of withdrawing these units from the British service for duty with the American Expeditionary Force in the following spring, and Brig.-General A. E. Bradley, the D.M.S. of the American Expeditionary Force, offered to send new units in place of the old units when the latter were withdrawn. This proposal was gladly accepted by the War Office, but it was hoped that the replacement should be gradual and not *en bloc*, as the dislocation of accommodation and work at the base would be great in the event of a completely new unit taking over the very extensive accommodation which was then in charge of the U.S.A. base hospitals. For example, No. 9 (Cleveland) General Hospital

had 1,250 beds; No. 12 (St. Louis) 1,330; No. 13 (Harvard) 609; No. 16 (Philadelphia) 1,820; and No. 18 (Chicago) 1,400 beds, in January 1918.

At that time there were 649 U.S.A. medical officers with the British forces, namely :—

122 with regimental units ;
257 with field ambulances ;*
5 with casualty clearing stations ;
31 with general and stationary hospitals ;
211 with the U.S.A. base hospitals ;
23 on the sick list.

The serious dislocation which would have occurred had these been withdrawn was obvious, and early information as to the intentions of the War Office and the American authorities with regard to their withdrawal was anxiously awaited. The situation fortunately was cleared up when it was decided in 1918 to send divisions of the U.S.A. army to be trained in, and be incorporated with British armies in the field. In consequence of this policy there was no withdrawal of the U.S.A. base hospital units, or of other officers of the U.S.A. Medical Corps, and the former remained at the British bases until January 1919.

Medical officers of the U.S.A. assigned to the British medical services, it may be mentioned, were available for any duty to which those in authority might desire to assign to them within the territorial limits of France or Great Britain, according to the decision of the Commander-in-Chief of the American Expeditionary Force in November 1917.

It was decided to send the IInd American Corps with six divisions to be trained with the British armies in 1918. The 77th U.S.A. Division consequently arrived in April 1918 for training in the Second Army area in the neighbourhood of Recques and Nordausques, on the road between St. Omer and Calais. For some time previously, Colonel C. C. Collins, the Chief Surgeon of the American IInd Corps,† was working out

* In the middle of August 1918 the number of officers of the U.S.A Medical Corps with British divisions was 386, and of the R.A.M.C. 1,542. The U.S.A. Medical Corps officers, however, were very irregularly distributed in the divisions, the numbers varying from one or two in one division to as many as 12 or 14 in another. This was brought to notice on 11th August 1918, and steps were taken to distribute them more equally.

† Colonel Collins had on his staff an assistant and consultant in surgery (Colonel F. A. Besley), an assistant and consultant in medicine (Colonel Mandel), and an officer in charge of clerical and office duties (1st Lieutenant W. L. Moore).

with the D.D.G.M.S. of the British G.H.Q. a scheme by which the divisional medical units could be trained with the divisional medical units of British divisions. The conditions were somewhat complicated, as the organization of a U.S.A. division differed in many material respects from that of the British. It was, however, essential that the training should be with the British transport and equipment, as only the medical personnel came with the U.S.A. divisions to France.

The U.S.A. division was composed of two infantry brigades of three battalions each, each battalion having four companies, and each regiment a medical or, as it was called, a sanitary detachment. In addition there were two battalions of an engineer regiment, a machine gun battalion, a signal battalion, and an artillery brigade of two regiments, and other divisional troops, the total strength of a division being some 27,000 of all ranks. A U.S.A. division was consequently considerably stronger than a British division, and its medical services were in proportion.

The regimental medical service was organized for the medical work of all three battalions, and established a regimental infirmary. It was to arrive in France with equipment complete except as regards transport and stretchers. The British field stretcher was to replace the American army litter, as the latter did not fit into the British ambulance transport which was to be taken over by the U.S.A. division. The number of stretchers required for a battalion was the same as for a British battalion.

There was also with each regiment a sanitary squad, and these regimental sanitary squads were more or less the equivalent of the British divisional sanitary sections. The British sanitary sections, however, of the area in which the American troops were being billeted continued to function in that area.

The medical units of the division formed what was called the divisional sanitary train, and it was in connexion with this that arrangements were made for fitting the American organization into the British field ambulance organization, as it had been decided that British field ambulance transport and equipment should be handed over to the medical units of the U.S.A. divisions. The U.S.A. divisional sanitary train was composed of an ambulance section and a field hospital section, the former consisting of three motor ambulance companies and one horse-drawn company, and the latter of three mechanical transport companies and

one horse-drawn company. The personnel of the sanitary train consisted of 49 medical officers and 863 other ranks, and as this personnel represented the personnel of four British field ambulances, it was decided that four of the latter should be handed over to each U.S.A. division. The transport of these four British field ambulances corresponded more or less with the ambulance transport of the U.S.A. sanitary train, as the former consisted of 28 motor ambulance cars and 12 horse-drawn ambulance wagons, as compared with 36 motor ambulance cars and 12 horse-drawn ambulance wagons in the latter. The transport for equipment and stores on a four field ambulance basis was considerably less than the transport required for the U.S.A. divisional sanitary train, but as British equipment was to be used, the British field ambulance transport sufficed.

In order to carry out this arrangement with the 77th U.S.A. Division, the sanitary train was placed for training under the D.M.S. of the Second Army and the A.D.M.S. of the 39th Division. It was necessary to obtain four British field ambulances for this U.S.A. division. Some of the British divisions were being reduced at that time to a cadre establishment, and thus arrangements could be made to withdraw field ambulances as necessary from British divisions for the purpose of handing over four field ambulances to each of the six divisions of the IInd U.S.A. Corps. Consequently, for the 77th American Division two field ambulances, Nos. 132 and 133, of the 39th Division, and one each from the 14th and 16th Divisions, were to be allotted ; but eventually the transport and equipment of all three field ambulances of the 39th Division, namely, Nos. 132, 133 and 134, and of No. 112 of the 16th Division, were handed over to the 77th U.S.A. Division. A R.A.M.C. cadre establishment consisting of the commanding officer, the quartermaster, serjeant-major, two staff-serjeants for charge of equipment of each section, and three serjeants, a serjeant cook and fifteen other ranks remained with each of the field ambulances to assist in the training of the American unit.

As the ambulance section of the American sanitary train consisted of four ambulance companies representing the bearer division of a British field ambulance, and a field hospital section of four field hospital companies representing the tent division of a British field ambulance, it was arranged that one ambulance company and one field hospital company should take over one British field ambulance, the former

being trained as the bearer division, and the latter as the tent division, as this was the only method by which the training could be adapted to the British field ambulance transport and equipment.

The training was divided, in accordance with a decision of the Commander-in-Chief of the American Expeditionary Force, into three periods, a period of preliminary training of three or four weeks, during which American personnel were instructed in field ambulance organization and duties in the field generally ; a second period of training when the officers and N.C.Os. were sent for short periods for duty with a British field ambulance in the line, and when subsequently all ranks of the ambulance and field hospital companies were distributed in turn to British field ambulances in the line. The third period of training consisted in training the ambulance companies and field hospital companies with the British field ambulance transport and equipment as complete units and involved their taking over the work of a field ambulance in the line as such. A school of instruction in sanitary work was established at Nordausques, where the regimental sanitary squads were trained.

This scheme of training was that generally adopted, and the 77th U.S.A Division eventually left to rejoin the American Expeditionary Force on the 10th June 1918, taking with it the transport and equipment of the four British field ambulances mentioned above, with the exception of the motor ambulance cars, which were not entrained with it. Eventually this division obtained its own equipment from the U.S.A., and handed over the British equipment at the end of July to a U.S.A. medical supply depôt, with the exception of the horsed transport, which remained with it.

The 30th U.S.A. Division was then trained in the same manner and place as the 77th U.S.A. Division. Four other divisions remained to be trained, namely, the 27th, 33rd, 78th and 80th, but these divisions only came with half their sanitary train, the remaining two ambulance companies and two hospital companies proceeding direct to the American Expeditionary Force, so that only eight field ambulances were required. The 34th British Division took over the training of the 80th American Division, Nos. 111 and 113 Field Ambulances of the 16th Division being allotted to it. The 25th British Division took over the training of the 78th American Division. The 27th American Division was trained with the 66th British Division with the 2/1st and 2/2nd East

Lancs. Field Ambulances allotted as the cadre. For the training of the 33rd American Division a cadre establishment of the 2/3rd East Lancs. Field Ambulance was allotted. These arrangements were made at the end of June and in July 1918.

At the end of July, however, the equipment of the sanitary train began to arrive from America, and when the American divisions were removed from the British area to join the American Expeditionary Force British equipment was not taken with them.

Only two American divisions, namely, the 30th and 27th, eventually remained with the British army. They formed the IInd U.S.A. Corps until the armistice. At first they went into line in the Canal and Dickebusch sectors of the Second Army, north of Kemmel Hill, but became G.H.Q. reserve near Doullens at the end of August 1918, after which the corps joined the Fourth Army and took part in the operations of that army from the 22nd September to the night of October 20th/21st. They left the British sectors and joined the American Expeditionary Force from the Third Army, to which they were then attached, on the 16th November 1918. At that time they had with them three British field ambulances, namely, Nos. 132 and 134 with the 30th Division, and No. 133 with the 27th Division. When the American divisions left, these field ambulances remained in the Third Army area and dealt with repatriated prisoners of war, until they were disbanded on the 9th December 1918.

The general arrangements for dealing with the sick and wounded of the American divisions with the British army were as follows :—

The sick, during the period of training, were treated by the personnel of the U.S.A. medical units that took over the British field ambulances. They were then, if necessary, evacuated to the nearest British casualty clearing station, and from there evacuated as required to the base by British ambulance trains in the same way as British sick. In battle the medical services of the U.S.A. divisions collected the sick and wounded to field ambulances under their own divisional arrangements. Their sanitary train personnel had already been trained to carry on this work with the transport and equipment of British field ambulances, the general system of collection being adapted to that of the R.A.M.C. The motor ambulance convoys of the British service then evacuated the sick and wounded from the field ambulances of the U.S.A. divisions to

the British casualty clearing stations under British army arrangements, and the British ambulance trains took them from casualty clearing stations to the base hospitals; but American sick and wounded coming down in these ambulance trains were distributed, so far as possible, to those general hospitals at the British bases, which were staffed by the U.S.A. medical units.

Several points connected with the administration had to be considered, such as the disposal of American sick and wounded from British hospitals, the method of clothing them, and maintaining their statistical records; also arrangements had to be made for inspections and for rest camps of the divisions on disembarkation. With regard to the last of these points, the original intention was that American divisions for the British armies were to arrive at Brest and Cherbourg; the arrangements at the former port were to be made by the American authorities, but at Cherbourg all the sanitary and medical arrangements were to be made by the British. At that time there was a British staff at Cherbourg as a terminal base of the Mediterranean L. of C. from Taranto under an A.D.M.S. of the Paris administrative area. The A.D.M.S., Paris, consequently made arrangements at Cherbourg for establishing a 300-bed hospital specially for the sick of the American divisions arriving there. There was already a British hospital in the Château de Tourlaville, near Cherbourg, for fifty beds, and a native hospital in tents also for fifty beds, with rest camps to accommodate 2,000.

With regard to statistical returns, the American casualties were entered with some slight modifications on the British returns submitted by each medical unit to the 3rd Echelon of G.H.Q. at Rouen, and they were extracted from these returns by officers of the U.S.A. army attached to that echelon. The modifications to the returns were the addition of the words "line of duty" or "own misconduct" immediately after the diagnosis, also the degree of severity of the disability, slight or severe, was to be stated in the diagnosis of injuries. The field medical cards of all American sick and wounded discharged from American base hospitals serving with the British armies were to be forwarded to the Chief Surgeon's office at the headquarters of the American Expeditionary Force, but those of all American cases treated in and discharged from British hospitals were to be forwarded on completion to the American Statistical Section attached to the 3rd Echelon, G.H.Q., at Rouen.

As American hospitals were being established in the United Kingdom, it was decided to evacuate the American sick and wounded from British hospitals in France to the United Kingdom in the same manner and by the same channels as British sick and wounded, and no distinction was made as regards hospital treatment and accommodation between the coloured troops and the white troops, the coloured American troops being on the same footing as the troops of the British West India Regiment. But as regards the slighter cases of sickness or injury, arrangements were made for collecting them from British hospitals at Rouen and transferring them from there in American ambulance trains to the American Expeditionary Force. Also officers and men unfit for further service were to be transferred in the same way. At one time it was decided that all those American sick and wounded in British hospitals who were not likely to be fit for service within three months were to be transferred to American hospitals in Paris, but there was considerable difficulty owing to the congestion of traffic in carrying this arrangement out, and evacuation to the United Kingdom took its place.

Between the 31st May 1918 and the 23rd July 1918 three of the American ambulance trains, Nos. 61, 63 and 66, were employed with the British armies in France, but none of the British ambulance trains was staffed by medical personnel from the U.S.A.

With regard to the clothing of American patients on their discharge from British hospitals, the arrangement was to provide them with underclothing in the same way as British troops, and as a supply of American uniform was maintained in the British ordnance supply depôts at Calais and Havre, it was decided that indents for clothing should be sent to these depôts as required, instead of maintaining a large supply of American uniform in each of the British hospitals.

A certain number of American sick and wounded from divisions other than those serving in the British zone were finding their way into French hospitals at Havre and Rouen in the later months of the war, and the United States authorities were desirous that they should be transferred to British hospitals, if possible to those staffed by Americans, and dealt with in the same way as sick and wounded American troops serving with British armies. The actual number, however, proved to be extremely small, only thirty-one wounded, and they were transferred direct from the French hospitals at Havre to England.

Medical and surgical material was supplied from British base and advanced depôts of medical stores to all the American units employed with the British armies.

On the 31st December 1918 there still remained in hospitals on the British lines of communication 638 sick and wounded Americans, including 17 officers, 15 sisters, and 606 other ranks. In addition there were 3 officers and 24 other ranks in medical units of the Third Army, and 15 other ranks in medical units of the First Army, one officer in a medical unit of the Second Army, and one other rank in the military hospital at G.H.Q., Montreuil, or a total of 21 officers, 15 sisters, and 646 other ranks.

In December 1917 the D.M.S. of the American Expeditionary Force asked that five surgical teams consisting of one surgeon, one assistant surgeon, one anæsthetist, one nurse, and one orderly, might proceed in turn to work for one month in a British casualty clearing station, learn war surgery and assist. It was suggested that the first team should work during the month of January, the second in February, and so on, the last working during the month of May. No. 3 Canadian Casualty Clearing Station at Remy Siding, then in the Fourth Army area, was selected as the casualty clearing station to which the teams should go. The first team reported there on the 22nd January, and the second team on the 1st March 1918. The latter, however, remained till the end of May, and there is no further record of the remaining teams having been sent. These teams were sent from American hospitals in Paris. A number of American medical officers were also sent to the First Army R.A.M.C. School of Instruction in No. 33 Casualty Clearing Station at Bethune and afterwards to No. 22 Casualty Clearing Station at Bruay.

Medical Arrangements with Tanks.

When tanks were first sent to France they were described as the Heavy Section of the Machine Gun Corps. They arrived in August 1916. A medical officer was then attached to this Heavy Section, but no definite steps had been taken to provide each tank with any special medical equipment. This question was considered by the General Staff, the D.G.M.S. and the Directorate of Gas Services, and an equipment consisting of a waterproof bag containing the following :—

Ammonia capsules	52
Picric acid solution	8 oz.
Sal volatile	8 oz.

Earthenware measure	1
Loose woven bandages	6
Shell dressings	7
Compressed gauze	2½ yds.
Gooch splinting	2 ft.

was authorized as the medical and surgical equipment of a tank.

When this Heavy Section of the Machine Gun Corps was eventually organized as a Tank Corps, a definite medical establishment for it was introduced into the War Establishments.

The corps was then organized to consist of a tank group headquarters, tank battalions, base workshops, base stores, and a reinforcement depôt.

It was contemplated in January 1918 that the strength of the Tank Corps would be about 20,000, the strength of a group approximately 6,000, and of the battalions about 770 of all ranks in the case of heavy tank battalions, and 630 of all ranks in the case of light battalions. The reinforcement depôt was to consist of 3,000 of all ranks. A D.A.D.M.S. was appointed to the corps headquarters, a medical officer to each tank group headquarters, to each tank battalion and to the reinforcement depôt.

It was not considered necessary to appoint a special A.D.M.S. for the Tank Corps, as the personnel would be distributed in various areas and come under the formation to which they were attached.

In a later organization, two R.A.M.C. orderlies were attached to each of the six companies of which a tank field battalion was to consist, together with a medical officer and two R.A.M.C. orderlies with the headquarters of the battalion.

In the later stages of the war the question of organizing tanks during battle not only for the reception, but also for bringing back wounded from the danger zone, was seriously considered. Many of them were employed for carrying infantry, and had a capacity of some 690 cubic feet. It was thought, therefore, that they could be mechanically designed also for medical purposes so as to correspond to a certain extent with a sick bay of a battleship, stretchers and hammocks being adjusted in tiers capable of carrying a dozen lying down cases or twenty sitting cases, with a dressing table in the centre, and doors enlarged for the entrance and exit of stretchers. It was intended that in this way they should work in touch with field ambulances and constitute a movable and protected advanced dressing station, and it was considered

that in the event of a tank brigade operating alone in open warfare a medical tank would become a necessity. In fact tanks had already proved of service in bringing back wounded during the battle of Cambrai, one tank having brought back as many as sixteen wounded; and in the operations of the Australian Corps at Hamel in August 1918 as many as 150 wounded were brought back in the tanks.

With regard to the effects of work in tanks, many minor accidents occurred, such as a dermatitis resembling impetigo attributed to the irritating effects of petrol fumes inside the tank. The casualties amongst men serving in tanks were, as a rule, not excessive, but the wounds were either very severe or very slight, the severe wounds being common as the result of a direct hit, or when the crews were wounded outside the tank. There were instances of only slight wounds occurring after the explosion of a shell inside a tank. The vast majority were only splash wounds due either to splinters from the inner table of the armour plating as the result of armour piercing bullets, or of splinters from ordinary bullets entering between the chinks of the armour plate fittings. As a rule, men so wounded remained on duty. Splinters in the eye had been troublesome and a veil of fine steel wire was designed for covering the face, but as a rule it was too cumbersome to be worn with comfort. Burns were very common, generally as the result of a direct hit into the petrol tank. When land mines or shells of large calibre exploded near the tank some of the men were concussed, others complained of pain and swelling of the ankle and knee-joints, and bruising of the os-calcis occurred. Occasionally there was spontaneous combustion of the tank.

After prolonged work inside the tanks, men complained of headache and faintness. The symptoms were generally headache, giddiness, breathlessness, palpitation, vomiting, mental confusion, unconsciousness, collapse, convulsions, florid complexion, and a rise of body temperature; headache and giddiness were practically constantly present. As a rule the symptoms soon passed off, but left the crews extremely exhausted, the men not being fit for duty for a period varying from two to seven days.

The main consideration was to arrange for the entrance of as much fresh air as possible into the tank and to prevent over-heating.

Alterations were made in the designs of the tanks in order to improve ventilation, and a fan which drew air from inside the tank through the radiator and expelled it through louvres

let into the armour plating behind, near the end of the exhaust pipe, was introduced. This, however, had the effect of causing the water in the radiator to boil, and instead a fan was fitted which drew in air from the louvres on the left-hand side and blew it through the radiators and expelled it through the louvres on the right-hand side. This was satisfactory so far as cooling the radiator was concerned, but unsatisfactory from the point of view of ventilation. On the whole the difficulties of obtaining satisfactory ventilation were great, and the general result was that the tanks with a full crew on board and closed down for action, after running a certain time, were liable to develop both the presence of carbon monoxide and a high wet bulb temperature. Consequently before action it was essential not only to test all the exhaust pipe connexions within the tank, but to keep all means of ventilation open as long as possible before action.

Medical Services with the Royal Air Force.

The medical establishment allotted to units of the Royal Flying Corps in the field in August 1915 was :—

1 serjeant and 7 privates, R.A.M.C., for R.F.C. Headquarters.
1 corporal and 1 private for Wing Headquarters.
1 private for each squadron.
1 corporal and 4 privates for an Aircraft Park.

No alteration was made in consequence of the reorganization of the R.F.C. on a brigade basis in February 1916.

When the Royal Air Force came under the control of an Air Ministry the units in France depended on the organization of the army medical service for all matters connected with the care of ordinary sick and wounded, whether employed in the air or on the ground, for hospital accommodation, medical equipment and sanitation. On 20th April 1918 the Major-General commanding the R.A.F. in the field, in a letter to the D.G.M.S., France, suggested that the personnel lent to the R.A.F. should continue to be administered by the D.G.M.S. It was advisable, however, that the medical officer attached to the headquarters of the R.A.F. should be given administrative authority over the medical personnel of the R.A.F. or employed in whole-time work in connexion with the R.A.F. It was not necessary to place him on the staff of the D.G.M.S. These views were submitted to the War Office by the Adjutant-General from G.H.Q. on the 19th May 1918, and an establishment of medical personnel for units of the R.A.F. in the field proposed by the G.O.C. of the Air Force was submitted. This

establishment provided for one medical officer on the headquarters of the R.A.F., with one warrant officer, one corporal, and six rank and file ; with brigade headquarters one N.C.O., R.A.M.C. ; with headquarters of a wing one medical officer with one or two other ranks ; and one or two other ranks with each squadron, balloon section, or aircraft park. Also, at an aircraft depôt there were to be one medical officer and six other ranks, and at a reception park, repair shop, or aerial branches, one medical officer to each with one or more other ranks.

From the 1st April 1918 all R.A.M.C. personnel employed for whole-time with the R.A.F. had been regarded as lent to that force and came under the administration of the Air Ministry. The medical officer in charge of the R.A.F. in the field was then given the right to move all medical officers attached to the Air Force as between units of the Air Force.

The position of the R.A.M.C. officers attached to or lent to the Air Force was not, however, clear ; and this was eventually settled in an Air Ministry Order of August 1918, when all medical officers of the Royal Navy or R.A.M.C. and dentists employed exclusively in R.A.F. stations were to be regarded as transferred or attached to the R.A.F. from the 1st October 1918, unless prior to that date they gave notice of objection ; and all R.A.M.C. orderlies on duty in R.A.F. stations, hospitals, or convalescent homes in the United Kingdom were also to be transferred to the R.A.F. unless they gave notice to their commanding officers that they desired to revert to duty with the R.A.M.C. Those transferred to the R.A.F. were required to relinquish their temporary commissions in the R.A.M.C. or General List if they were holding temporary commissions. These instructions were issued in Army Orders of the 9th September 1918.

With regard to the transfer of R.A.M.C. personnel to the R.A.F. on the 1st October 1918, it was decided that they should not be automatically transferred but should rejoin their army units when their services were no longer required, and on the 7th January 1919 the D.G.A.M.S. informed the D.G.M.S. in France that the officers of the R.A.M.C. should only be regarded as temporarily on loan to the R.A.F., and therefore available for other duty when required, and that applications for permanent attachment to the R.A.F. should be put forward to the Air Ministry.

In May 1917 there was no scale of medical and surgical equipment laid down for the headquarters of a brigade of the R.F.C. The strength of the headquarters was only twenty,

and the scale of medical equipment allowed for squadrons was considered sufficient. A field medical equipment was allowed for each squadron similar to that allowed to a battalion of infantry. This equipment, however, was not regularly authorized until August 1918. Special first-aid outfits for aeroplanes were issued at a much earlier date; as many as 250 having been received by April 1917, when 500 more were required. These were, however, stopped in September 1918, as the D.G.M.S. then considered that the shell dressing carried by each pilot was sufficient. The Air Ministry had also in August 1918 arranged for a rescue apparatus in an aeroplane, which should be ready at all times.

A medical officer with a Crossley ambulance car at each aerodrome was appointed to each wing of the R.A.F., and all questions of sanitation, general health of officers and other ranks, were under the control of the administrative medical officers of the areas or armies in which the R.A.F. was employed; but an organization of the medical services of the Air Force was issued by the Air Ministry in June 1918, in accordance with which there was to be a senior medical officer at each area headquarters, as area assistant medical administrator, who was to be responsible under the medical administrator for medical arrangements. The sanitary arrangements were, however, to remain under the supervision of the army medical authorities. Lieut.-Colonel J. L. Birley was appointed administrative medical officer at headquarters of the R.A.F. and was in close liaison with the D.G.M.S. at G.H.Q., France.

Medical arrangements for the Independent Air Force in the Nancy area were considered at the same time. The aerodromes under construction, nine in all, were scattered throughout a large area. The distance between the aerodromes of the wings made it important to have a detention hospital for each wing, except at two of the aerodromes which were near each other, where one detention hospital sufficed for both. The detention hospitals were to be 20-bedded hospitals, and, in addition to the officer in medical charge of the wing, had an establishment of one corporal and one private R.A.M.C., together with the motor ambulance car. There were five medical officers doing duty in the area with R.A.F. and labour units at the time, but three belonged to the Indian Medical Service and would probably leave when the Indian labour units were withdrawn. No. 8 Canadian Stationary Hospital was installed under canvas about half a mile outside Charmes in the centre of the area with 302 beds including an

isolation section of 30 beds. There was a good hospital site near, where hutments were being erected for a permanent hospital of 480 beds, and No. 8 Canadian Stationary Hospital was to take possession of this on completion. The site was central to the groups of aerodromes and convenient to the railway.

A section of No. 8 Canadian Stationary Hospital consisting of 40 beds under canvas for sick of the Canadian Forestry Corps was in the Courban area, about 200 kilometres from Charmes, where large workshops were being constructed for repair of aeroplanes, and a permanent hutted hospital of 100 beds was also required there. A site was selected for it about three and a half kilometres from the village.

The area was under the administrative control of the A.D.M.S., Paris. An ambulance train coach was to run to Charmes or Courban to clear patients to base hospitals when necessary.

On the 21st August 1918 the D.G.M.S. issued instructions for No. 42 Stationary Hospital to move to the Independent Air Force area, in relief of No. 8 Canadian Stationary Hospital.

Colonel D. D. Shanahan was appointed A.D.M.S. of the Independent Air Force on the 2nd July 1918. Previously to this the A.D.M.S., Paris, the A.D.M.S., Marseilles, and the D.D.M.S., Rouen, had been administering medically one or more of the Canadian Forestry Corps districts until April 1918, and the units of the R.A.F. in their areas. In consequence of this arrangement proving unsatisfactory, all the districts of the Canadian Forestry Corps in France, except those attached to armies, were placed under the medical control of the Senior Medical Officer of the Corps, who happened to be the officer in charge of No. 8 Canadian Stationary Hospital. He had carried out his duties without friction; and the medical services of the Canadian Forestry Corps had worked successfully in co-operation with the A.Ds.M.S. of the L. of C. administrative areas. There was, however, some unfortunate friction when an A.D.M.S had been appointed to administer the medical services in the Independent Air Force area, and in order to put an end to it No. 8 Canadian Stationary Hospital was replaced by No. 42 Stationary Hospital.

The medical units with the Independent Air Force were then No. 42 Stationary Hospital, and Nos. 1 and 55 Sanitary Sections, with a medical personnel consisting of an A.D.M.S., a D.A.D.M.S., three R.A.M.C. officers, one Indian medical officer and one officer of the Indian subordinate medical department.

At the request of the G.O.C., R.A.F., in February 1918, medical officers attached to the R.A.F. were sent to No. 24 General Hospital at Etaples to become acquainted with the most recent methods of determining the fitness of an individual for different types of flying.

After the armistice, Lieut.-Colonel Tyrrell was appointed Senior Medical Officer of all R.A.F. units with the Army of the Rhine, and had under his control the medical officers of each wing.

Indian and Dominion Medical Services.

The general organization of the medical services of the Indian Contingent and their introduction into the Expeditionary Force is specially dealt with in the next chapter.

Its two classes of general and stationary hospital, one for British and the other for Indian troops, were unnecessary in France, and the British general hospitals were converted into R.A.M.C. units or into units for Indians.

There were no features in the organization and work of the Canadian, Australian, New Zealand and South African medical services involving any marked deviation from the organization and work of the R.A.M.C. units, except in dentistry. Both the Canadians and Australians had a much more extensive and complete dental service than the R.A.M.C Their medical units on the lines of communication and in army areas were available for sick and wounded of any formation, and, with the exception of the field ambulances, which formed part of the dominion divisions, were not allotted for the reception of patients of their own contingents.. It was impossible to arrange otherwise, in consequence of the frequent transfers of the dominion corps and divisions from one sector of the front to another, movements with which neither base hospitals nor casualty clearing stations could conform without incessant interruption of their work. But so far as possible their casualty clearing stations were moved to the army in which the Canadian or Australian Corps might be from time to time.

With regard to the New Zealand medical services, an officer of the R.A.M.C., Surg.-General R. S. F. Henderson, was sent to New Zealand at the request of the New Zealand Government towards the end of 1915 to assist in the training and organization of the New Zealand Medical Corps. He remained there until the end of the war.

CHAPTER V.

THE MEDICAL SERVICES WITH THE INDIAN CONTINGENT.

THE Indian Contingent which was sent to join the British Expeditionary Force in France was composed of the 3rd (Lahore) Division, the 7th (Meerut) Division, and the 1st and 2nd Indian Cavalry Divisions. These troops began to arrive at Marseilles at the end of September 1914, the Lahore Division and Secunderabad Cavalry Brigade of the 2nd Cavalry Division completing their disembarkations on the 26th September, and the Meerut Division on the 2nd October. They were followed on the 10th November and the 14th December by the 1st and remainder of the 2nd Indian Cavalry Divisions.

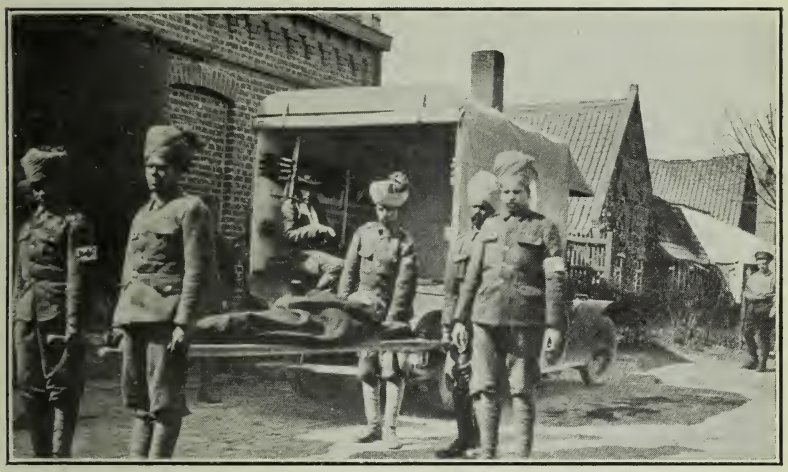
The Lahore and Meerut Divisions were formed into an Indian Corps under Lieut.-General Sir James Willcocks. Colonel Treherne, who came to France as A.D.M.S. of the Meerut Division, was appointed to General Willcocks' headquarters as D.D.M.S. of the Indian Corps, his place as A.D.M.S. Meerut Division being taken by Lieut.-Colonel J. Davidson, R.A.M.C., with Major H. Boulton, I.M.S., as D.A.D.M.S.; Colonel Grayfoot, I.M.S., was A.D.M.S. of the Lahore Division, with Major Sloan, R.A.M.C., as his D.A.D.M.S.

Colonel G. H. Hunter was A.D.M.S. of the 1st and Colonel W. W. Pike of the 2nd Indian Cavalry Divisions; but after both divisions had arrived in France they were formed into an Indian Cavalry Corps under General Remington. Colonel Pike became its D.D.M.S. at the end of 1914. At that time the new organization of armies of the expeditionary force into a First and Second Army and independent cavalry and Indian cavalry corps was taking place, and D.Ds.M.S. were being abolished in the corps of the two Armies. Consequently Colonel Treherne reverted to his former appointment of A.D.M.S. of the Meerut Division, and Lieut.-Colonel J. Davidson was transferred to the 2nd Indian Cavalry Division as its A.D.M.S. in place of Colonel Pike.

The Field Ambulances.

Each of the infantry divisions had five field ambulances organized in accordance with Indian War Establishments. As the units composing the divisions were partly British and partly

Indian troops, the field ambulances, and in fact all the hospitals organized in India were of two types, one type being for the care and treatment of British and the other for the care and treatment of Indian troops. The former type bore the designation British field ambulance or hospital, and the latter Indian field ambulance or hospital. The Lahore Division consequently had with it Nos. 7 and 8 British Field Ambulances and Nos. 111, 112 and 113 Indian Field Ambulances; while the Meerut Division had Nos. 19 and 20 British Field Ambulances and Nos. 128, 129 and 130 Indian Field Ambulances. The constitution of both types differed materially



Ambulances outside the Dressing Station of an Indian Field Ambulance, Zelobes.

from that of the field ambulances of the British Expeditionary Force. They were composed of four sections, each section being organized for the accommodation of 25 patients, in contrast with the R.A.M.C. field ambulance of three sections which had accommodation for 50 patients in each section. A field ambulance of the Indian Establishment accommodated therefore 100 patients instead of 150, but as there were five field ambulances with an Indian division, in place of the three with the British division, the total accommodation was greater in the former.

Another important difference in their constitution was that instead of having nine medical officers, there were only five, one of whom was a specialist in operative surgery, in each field ambulance, but they were supplemented by eight

assistant or sub-assistant surgeons of the Indian Subordinate Medical Department, the officers of the R.A.M.C. and the assistant surgeons being with the British, and the officers of the I.M.S. and the sub-assistant surgeons with the Indian field ambulances. Further, the subordinate personnel consisted of both Europeans and Indians and was not homogeneous in character.

The Europeans with the British field ambulances were four packstore serjeants, a supply and transport serjeant, and eight nursing orderlies, who were not members of the R.A.M.C. but were men belonging to British infantry battalions selected

Outside the Dressing Station of an Indian Field Ambulance, Zelobes.

for special training in nursing duties in the hospitals in India. The Indian personnel consisted of 50 men of the Army Hospital Corps, a corps which provides ward servants, cooks, water carriers and sweepers as the equivalent of the general duty and cooking sections of the R.A.M.C., and 133 men of the Army Bearer Corps, a corps specially trained in India for carrying dandies and for work as stretcher bearers, although not actually trained in the use of the field stretcher to the same extent as the men of the R.A.M.C.

The Indian field ambulances were similarly constituted, except that they had no personnel belonging to the Army Hospital Corps, and the only arrangements for nursing consisted of eight ward orderlies, who, together with fourteen cooks, water carriers or sweepers, were obtained from Indian

regimental establishments. The Army Bearer Corps personnel had been detailed to their field ambulances on mobilization from the Army Bearer Corps companies maintained in each division in India in time of peace, but as their numbers were insufficient to provide personnel for the mobilization of all the field ambulances and other units, to which they were allotted, the deficiencies had to be made good by enlisting men from the bazaars and country districts, so that on arrival in France many of them were practically untrained.

The cavalry field ambulances which accompanied Indian cavalry divisions to France had a different constitution, although, according to Indian War Establishments, their organization is practically the same. Instead of British and Indian types of cavalry field ambulances accompanying each of the cavalry divisions to France, a composite cavalry field ambulance, composed of one section of a British and two sections of an Indian cavalry field ambulance was attached to each of the Indian cavalry brigades. Thus the 1st Cavalry Division, formed of the Ambala, Lucknow and Sialkote Cavalry Brigades, had an Ambala, Lucknow and Sialkote Cavalry Field Ambulance of this composite type; and the 2nd Cavalry Division, formed of the Secunderabad, Mhow and Meerut Cavalry Brigades, had a Secunderabad, Mhow and Meerut Cavalry Field Ambulance. An independent unit of Indian troops, the Jodhpur Lancers, was attached to the 2nd Cavalry Division and had with it a section of a Jodhpur Cavalry Field Ambulance. The Secunderabad Cavalry Field Ambulance came to France at the same time as its brigade and was consequently one of the first of the Indian medical units to reach the Flanders front. The remaining cavalry field ambulances arrived with their divisions at Marseilles in November and December 1914.

The field and cavalry field ambulances from India arrived in France with their personnel and medical and surgical equipment only. They were to be provided with transport and ordnance equipment on arrival in France. The dandy, which was the normal ambulance hand carriage according to the Indian organization, had been left behind in India and had been replaced in Egypt by stretchers.

The Regimental Medical Service.

The regimental medical service attached to troops on the Indian establishment also differed in many essential points from that of the British Expeditionary Force. Each British

cavalry regiment or infantry battalion should have had, according to Indian war establishments, one officer of the R.A.M.C., one assistant surgeon, twelve men of the Army Bearer Corps, and one man of the Army Hospital Corps attached to it, but the men of these Indian corps did not accompany regiments or battalions to France. Indian cavalry regiments and infantry battalions had a similar medical personnel of one officer I.M.S., and one sub-assistant surgeon, but also came without the twelve men of the Army Bearer Corps allotted to them for Indian warfare. The number of field stretchers with these regimental units was normally four, or half the number with the British Expeditionary Force units ; but a number of blanket stretchers was allotted to units in India to supplement the field stretchers. Many of the units, however, came without field stretchers from India owing to the supply of stretchers being below mobilization requirements, and many left their blanket stretchers behind, so that units had eventually to have their stretcher equipment made good either in Egypt or France. Although the blanket stretchers appeared to be useful for trench work, units bringing them to Flanders had eventually to discard them, as they were not suitable for carrying serious cases, such as cases of fracture of the thigh, and were not interchangeable with field stretchers for placing in ambulance transport vehicles. Further, the poles were as long as those of the field stretcher and therefore of no greater advantage in the trenches.

The Clearing Hospitals.

Three clearing hospitals designated the Lahore, Meerut and Lucknow Clearing Hospitals, were sent to France, the two former with the Indian Corps, and the latter with the Indian cavalry divisions. Like the cavalry field ambulances they did not mobilize as separate British and Indian types of units, as laid down in Indian war establishments, but were composite units, each consisting of one section of a British clearing hospital and three sections of an Indian clearing hospital. They were comparatively small units, as regards personnel and equipment, and had only four medical officers and eight assistant or sub-assistant surgeons each. The majority of the subordinate personnel were bearers of the Army Bearer Corps (25), and there were no nursing orderlies, other than two regimental ward orderlies for each section or eight for the combined unit. The normal allotment of clearing hospitals,

according to Indian war establishments, is two British and six Indian sections for each division, so that the provision made for the contingent sent to France was half the normal allotment.

The Stationary Hospitals.

The types of stationary hospitals in Indian war establishments are similar in organization to the clearing hospitals; only two, however, and of the Indian type, came to France, the Meerut and the Lahore Indian Stationary Hospitals. They were formed of eight sections, with a total accommodation for 200 patients, but with a modified scale of medical personnel of four I.M.S. officers and eight assistant or sub-assistant surgeons, instead of eight medical officers and sixteen of the I.S.M.D. The subordinate personnel, like that of the clearing hospital, were mainly bearers of the Army Bearer Corps.

The General Hospitals.

General hospitals of two types, British and Indian, were also organized in independent sections, each section accommodating 100 beds. Three British general hospitals, the Lahore, Meerut and Rawal Pindi, and two Indian general hospitals, the Lahore and the Secunderabad, were sent to France. The British general hospitals had two sections only, or 200 beds, but the two Indian general hospitals, normally of five sections, had each a sixth section. The accommodation, therefore, in stationary and general hospitals sent to France was for 600 British and for 1,600 Indian sick and wounded. A third Indian general hospital, the Meerut, had been diverted from France to England, and opened at Brockenhurst in the New Forest. None of these hospitals had the establishment laid down in 1913 War Establishments, India; they had instead a modified scale recommended by a Simla Committee on Medical Stores in 1913. The medical personnel consisted of four R.A.M.C. officers and four assistant surgeons for each section of the British, and two I.M.S. officers, one assistant and four sub-assistant surgeons for each section of the Indian general hospitals.

A medical unit of a kind which did not exist in the Army Medical Service war establishments, namely the X-ray section, accompanied three of the general hospitals. The X-ray section was a small unit, in charge of an officer of the R.A.M.C. or I.M.S., normally organized for mobility in hill

warfare and for carriage by pack transport. The three which came to France were the Lahore, Meerut and Secunderabad X-ray Sections.

Depôts of Medical Stores.

The only other class of medical unit sent from India with the Indian Contingent was the Advanced Depôt of Medical Stores. In India there were large medical stores similar to the Army Medical Store at Woolwich for supplying medical and surgical equipment to the troops and to hospitals both in peace and war, and no base depôts were organized as war establishment units. Consequently only advanced depôts came to France. They were three in number, the Meerut, Lahore, and Bombay Advanced Depôts, each in charge of a senior assistant surgeon of the Indian Subordinate Medical Department, now the Indian Medical Department, with a small establishment of five Indian followers for carpentry, packing, water carrying and sweeping. No sanitary sections accompanied the Indian Contingent.

Disposal of Indian Sick and Wounded.

Marseilles was organized as the sea base for the Indian Contingent, and a line of communication was established between it and Orleans as an advanced base. This southern line of communication, as it was called, was, as already noted, under the administrative medical charge of an A.D.M.S., Colonel S. Hickson, with Major Bateman as his D.A.D.M.S., and subsequently Major Needham, I.M.S., as D.A.D.M.S. for Sanitation. Camps were formed at both these bases. As the Indian formations arrived they were transferred to Orleans and from there to their concentration areas in Flanders, in the vicinity of St. Omer. Their field ambulances and cavalry field ambulances accompanied the formations to which they belonged. The clearing hospitals and advanced depôts of medical stores were also brought up to Flanders, but at different times. The general and stationary hospitals and X-ray sections were distributed to the Indian bases at Marseilles and Orleans, and to Boulogne and Rouen, Boulogne being the chief hospital centre.

At first there was considerable delay in determining the policy which was to be adopted in evacuating Indian sick and wounded from France. At one time it was suggested that they should go to Egypt, in which case evacuation from Flanders would be by railway and ambulance train to Marseilles as a sea base

At another time it was proposed to evacuate them by sea from Boulogne to Marseilles and thence to Egypt. Eventually it was decided to evacuate them to hospitals in England by specially fitted Indian hospital ships; but until this was definitely decided the situation in France was one of difficulty and was only saved by the large and excellently equipped hospital ships which came to Boulogne and acted temporarily as hospitals until sufficient hospital accommodation for Indians had been established on shore in France and in England. Although a personnel for hospital ships and ambulance trains is laid down in Indian war establishments, no personnel for these purposes accompanied the Indian Contingent, and in order to supply hospital ships and ambulance trains with Indian personnel, such as sub-assistant surgeons, cooks and ward orderlies, the Indian hospitals, already insufficiently staffed according to a European standard of efficiency, had to be depleted. No ambulance trains were specially organized for Indians in France and the policy was adopted of reserving accommodation for Indians on the British ambulance trains and allotting certain Indian personnel to them from the Indian hospital units.

When sick and wounded Indians were arriving in considerable numbers at Boulogne, the arrangements in England for relieving the congestion in the Indian hospitals in France were incomplete, especially as regards Indian medical personnel, and when it was decided to evacuate them to England the War Office asked that they should be accompanied by hospital personnel. This was impossible in view of the depletion to which the Indian hospitals had already been subjected.

Changes in Organization after Arrival in France.

It was obvious that the medical units of the Indian Contingent, based as they were on an organization adapted for Indian frontier warfare and dependent on essential elements of personnel and equipment being provided after arrival in France, were not capable of meeting the strain to which they were subjected when Indian troops took up a position in the fighting line. They were in fact barely sufficient as regards personnel and hospital accommodation to deal with the sick who began to fill the hospitals shortly after their arrival. The hospital units had been split up and distributed in such a way as to impair their efficiency still further, and much anxiety was felt regarding the possible behaviour of the bearers of the field ambulances, many of whom were quite untrained

and had no knowledge of stretcher work. Surg.-General W. G. Macpherson, who during 1911, 1912 and 1913, held an administrative medical appointment in India, was consequently appointed on his arrival in France to undertake the task of bringing the Indian medical arrangements into line with the requirements of field service in Europe.

The immediate requirements were reinforcements up to 30 per cent. of the menial medical personnel and of the class known as followers in Indian war establishments, that is to say, cooks, water carriers and sweepers; and the appointment to the Indian hospitals of ward and nursing orderlies from the R.A.M.C. or voluntary aid detachments. The British general hospitals, which came from India, were superfluous as hospitals for British sick and wounded. As their subordinate personnel was similar to that of the Indian hospitals, they could be much more profitably employed in adding to the accommodation for Indian sick and wounded. The clearing hospitals and stationary hospitals required at least double the number of medical officers. The ambulance transport allotted to the field ambulances with the Indian Corps consisted of six horsed ambulance wagons only for each ambulance. Motor ambulance cars were necessary. They were not given to them until 1915, but three motor ambulance cars were placed at the disposal of the A.D.M.S. of both divisions from the first. The Indian cavalry field ambulances, on the other hand, were provided with seven motor ambulance cars each on arrival in France.

The equipment brought from India with the Indian type of hospital did not admit of a high standard of comfort, and steps were taken to provide them with beds and bedding similar to the equipment of the hospitals of the expeditionary force. The Indian hospital ships, which had been prepared and equipped in England, were, however, fitted and supplied with every comfort for sick and wounded and left nothing to be desired in this respect.

The Indian personnel of the field medical units arrived badly equipped as regards clothing suitable for the climate in Flanders, and for some time, until this had been rectified, the conditions under which they served at the front was the subject of much comment. This was specially the case with regard to the footgear of the men of the Army Bearer Corps, who were provided with neither boots nor socks until some time after their arrival in France. They came with their Indian chaplis only, which were quite unsuitable for work in the trenches and muddy ground of the front line. In November and

December, however, all the personnel were supplied with warm winter clothing, and the Indian ranks were provided with boots and socks; extra blankets were also carried for patients and extra feeding utensils were provided. Later on, the improvised transport which had been issued at Orleans was replaced by regulation pattern transport bringing the Indian field ambulances into line with those of the field ambulances of the expeditionary force, and the regimental nursing orderlies were gradually replaced by men of the R.A.M.C.

Distribution of the Indian Medical Units in France.

The Marseilles Base.—Steps were taken to organize bases in anticipation of the arrival of the Indian Contingent, and Colonel F. W. C. Jones had been sent to Marseilles for this purpose early in September. The arrangements made by him and subsequently by Colonel Hickson for medical and sanitary services were supplemented by an Indian disembarkation staff which had been sent to Marseilles in advance of the divisions with Major Needham, I.M.S., as medical officer for disembarkation duties. Consequently, when the Indian troops arrived all arrangements had been made for dealing with the sick on the transports. An aid post had been opened on the quay and motor ambulance transport was obtained for taking the sick to a hospital in the city. Sanitary arrangements had also been made in all the camps which the units were to occupy. As a temporary measure one British and one Indian field ambulance were opened some 3½ miles out of Marseilles for the British and Indian sick of the 3rd (Lahore) Division, and they in their turn were relieved by a British and Indian field ambulance when the 7th (Meerut) Division arrived and the Lahore Division entrained for the front. Several rest camps were formed in the city and its neighbourhood. A base depôt for reinforcements was formed on the Parc Borelli racecourse. Towards the end of 1914 it was transferred to a better situation in the grounds of the Château Musso some three or four miles outside Marseilles.

The Lahore British General Hospital and the Lahore Indian Stationary Hospital remained at Marseilles. The former was in a villa on the Prado near the racecourse and provided from amongst its staff medical and sanitary personnel for the base depôt. The latter occupied at first the building and grounds of an old farm, the Champagne d'Evêque, at a considerable distance from the camps for troops, but was

eventually transferred to the Château Musso, where good sanitary arrangements had been made before the grounds were occupied as a base depôt. There was a considerable amount of sickness amongst the Indians on disembarkation, mumps and measles having broken out on the transports, so that much of the accommodation of the Lahore Indian Stationary Hospital was taken up for isolation of these cases. A contact camp at La Penne outside Marseilles was used for the units affected. The Indians also suffered considerably from respiratory affections during the voyage, and much venereal disease was contracted in Marseilles during their stay there, as well as in Bombay and Egypt.

The Orleans Advanced Base.—When the Indian troops began to arrive in Orleans the medical and sanitary arrangements were not in the same organized state as at Marseilles, and for a considerable time the sanitary officer, Captain Parkinson, and the sanitary squads, who had only arrived at the same time as the troops, found it difficult to effect much sanitary improvement, owing to the wet weather in November, which had converted the infantry rest camp on the racecourse, Les Groues, into a sea of mud, as well as to the lack of facilities and labour for erecting suitable sanitary constructions. There was a camp for units, in which infectious disease had occurred, at the rifle range, Cercottes, some four miles north of the town. It was used also as a mule and equipment depôt and had been much fouled previously during its occupation by French and other troops, as well as by the Lahore Division, when it went to Orleans. A cavalry rest camp at La Source, some four miles on the south of the town, was on higher and better ground, but in the absence of sanitary constructions it too became rapidly fouled by the constant arrival and departure of units during the night.

No. 10 Stationary Hospital had been sent to Orleans on the 30th September in advance of the arrival of the Indian troops, but was opened in a school at La Chapelle, some miles west of Orleans. Several cases of pneumonia and other respiratory affections from amongst the Indians had been admitted to it before the Indian hospitals had come up. The Meerut British General Hospital arrived on the 17th October, and opened temporarily in tents in the muddy camp at Les Groues, but transferred the sick to No. 10 Stationary Hospital, until the latter left Orleans at the end of October, when the school premises occupied by it were taken over by the Meerut Hospital. This hospital was being depleted of personnel for duty on

hospital ships, and the personnel of one of its two sections was sent on the 12th November for duty in the Indian Convalescent Depôt which was being opened at Rouen by No. 8 Stationary Hospital. The Meerut Indian General Hospital was sent to Orleans at the same time as the Meerut British General Hospital, but did not detrain. After remaining on trucks at Orleans for three days, it was ordered back to Marseilles on the 19th October and embarked on the hospital ship "Sicilia" on the 23rd October for England, where it eventually opened at Brockenhurst. In its place a section of the Lahore Indian General Hospital was sent to Orleans and arrived there on the 29th October. It opened in buildings near the Meerut British General Hospital at La Chapelle.

No A.D.M.S. had been appointed to administer the medical and sanitary services at this advanced base, nor was anyone definitely exercising the functions of a senior medical officer. The result of all this lack of administrative and sanitary control in anticipation of and after arrival of the Indian formations was very marked and contrasted most unfavourably with the condition of the camps and hospitals in Marseilles. The difficulties with which Captain Parkinson had to contend were still further increased by the fact that he was not provided, as were other administrative services, with sufficient means of transport to enable him to supervise constantly the sanitary condition of the camps situated at such wide distances apart, and by the absence of rest camp staffs to control the arrival and departure of troops and ensure sanitary discipline. In fact the conditions at Orleans during October and November 1914 were an object-lesson on the necessity of the sanitary organization of camps at a base of this nature being completed before the arrival of the troops.

The field medical units received their ordnance and transport equipment at Orleans and consequently remained there for several days before proceeding to Flanders.

The Lahore Advanced Depôt of Medical Stores and the Meerut X-ray Unit were sent to Orleans. The former was pitched in the open in the Les Groues camp, but in December was moved into a building. It supplied medical and surgical stores not only to the hospitals and units in Orleans but also to those at Marseilles. Its stock was replenished from No. 3 Base Depôt of Medical Stores at Rouen. The Meerut X-ray Unit was with the Meerut British General Hospital but was practically unemployed. It went subsequently to Boulogne, where it was attached to the Meerut Indian Stationary Hospital.

The Boulogne Base.—Boulogne became the base for hospitals receiving Indian sick and wounded from the front. Until they were opened or had opened with sufficient accommodation, the Indian hospital ship, "Glengorm Castle," remained in harbour as a hospital before sailing for Southampton. The first Indian hospital to arrive at Boulogne was the Meerut Indian Stationary Hospital. It had mobilized in India under Major Wall, I.M.S., as a hospital of eight sections or 200 beds, four of the sections in Meerut and four in Lucknow; but instead of eight medical officers, only four were allotted to it. There was apparently great confusion in the arrangements for its embarkation at Bombay resulting in personnel and equipment being embarked on two or three different transports. Consequently on arrival at Marseilles on the 12th October one of the four medical officers had to be left behind to recover equipment when the remainder of the unit went to Rouen. But before the unit entrained for the north of France, Major Wall, I.M.S., was ordered to detail four of his sub-assistant surgeons, eight ward orderlies, eight cooks and water carriers and four sweepers to work in four separate parties on ambulance trains, and was at the same time made responsible for rationing not only them but also sick and wounded on the trains, a duty which it seemed scarcely possible for him to carry out. Further, on arrival at Rouen on the 20th October, four sections of the unit were ordered to proceed to Boulogne, while the remaining four remained at Rouen. The unit was thus completely disorganized and only two medical officers, Major Goodbody and Captain Middleton-West, were available to proceed with the four sections to Boulogne. Major Wall remained with the unit at Rouen and the fourth medical officer was endeavouring to recover stores and equipment from transports at Marseilles. The sections left at Rouen were, however, a mere skeleton of a stationary hospital, as the personnel was still further depleted to provide cooks and sweepers for ships. The equipment had, however, been recovered and was brought to Rouen on the 25th October by Captain Palit, the fourth medical officer of the unit. After detaching some further personnel for duty in Indian wards, which were being prepared by No. 8 Stationary Hospital, Major Wall and the remainder of the Meerut Indian Stationary Hospital were sent to Boulogne on the 31st October.

Indian wounded were arriving by this time in considerable numbers from the front, but owing to the initiative and energy of its officers, the hospital, which had taken over the more or less ruined buildings of the Jesuit College at Boulogne,

was shaping well and was fully competent to deal with the work thrown on it, especially as the "Glengorm Castle" was still in the harbour and relieving it of congestion. Hospital marquees from one of the British hospitals were pitched in the grounds of the College and some 300 of the slighter cases of sickness and wounds accommodated in them. The personnel was reinforced on the 8th November by twenty-five British N.C.Os. and men who were unfit for duty with their units at the front, French laundry women were engaged for laundry work, and six civilian doctors, who had been sent to Boulogne by the British Red Cross Society and were seeking employment, volunteered for duty in the wards, and were added to the medical staff. Major Goodbody was then detailed to act as A.D.M.S. for the Indian Contingent on Surg.-General Macpherson's staff, but returned to his unit on the 10th December, and an additional I.M.S. officer and two officers of the R.A.M.C. were appointed to it in relief of the doctors of the British Red Cross Society shortly afterwards. Five additional officers of the R.A.M.C. were appointed on the 27th December. By this time the Meerut Indian Stationary Hospital had expanded to a large unit, and the Meerut X-ray Unit was transferred from Orleans for work in it. His Majesty the King visited it on the 30th November.

The Indian establishment of the Rawal Pindi British General Hospital, which arrived at Marseilles on the 7th and was brought to Boulogne on the 14th November, was also transferred to the Meerut Indian Stationary Hospital. This British hospital was reorganized as a general hospital for the British troops on the European scale of establishment. It opened in an hotel in Wimereux for 520 beds. It was given R.A.M.C. in place of its Indian establishment, and several members of the Q.A.I.M.N.S. were appointed to it.

The Lahore Indian General Hospital, less the section sent to Orleans, was ordered from Marseilles to Boulogne on the 26th October, but there is no record of its work until the command of the hospital was taken over by Lieut.-Colonel Bamfield, I.M.S., on the 14th November 1914. The hospital had been given part of the buildings of the Jesuit College not occupied by the Meerut Stationary Hospital, and had the Lahore X-ray unit attached to it. There was, however, much delay in getting the ruined buildings prepared for hospital purposes, and temporary accommodation had to be obtained in tents, pending the construction of huts. As winter was approaching accommodation for Indian hospitals was consequently sought

elsewhere, and at the end of November the Ecole Militaire at Montreuil, which subsequently from 1916 onwards was occupied by G.H.Q., was obtained from the French authorities. It had up to this time been occupied by Belgian refugees. The Lahore Indian General Hospital was transferred to it together with the Lahore X-ray Unit between the 9th and 12th December and the whole of the Jesuit College with tentage and huts in construction was taken over by the Meerut Stationary Hospital, which had by that time considerable reinforcements of personnel, as just noted.

Three sections of the Secunderabad Indian General Hospital arrived at Marseilles on the 7th November and left for Boulogne four days later. The remaining three sections did not arrive in France till the 17th November. The six sections formed a complete unit at Boulogne by the 24th November, but did not open there. An hotel and neighbouring villas at Hardelot, a seaside resort some ten miles south of Boulogne, had been selected for an Indian hospital, and the Secunderabad Indian General Hospital went there on the 29th November. The Secunderabad X-ray Unit went with it. The first convoy of sick sent to it arrived on the 8th December.

The Convalescent Depôt.—The only other medical unit organized for Indians on the lines of communication was an Indian Convalescent Depôt at Rouen. It was opened at first by No. 8 Stationary Hospital with the personnel of one section of the Meerut British General Hospital from Orleans, but subsequently on the 25th November it became an independent unit of 500 beds under Major Purser, R.A.M.C., who commanded the section. The accommodation was gradually increased and eventually was capable of dealing with 1,000 convalescents and 300 sick in hospital wards. The depôt was subsequently handed over with the Indian personnel to an officer of the I.M.S., and the Meerut British General Hospital then became a British unit for infectious diseases at Rouen at the end of February 1915.

The Hospitals.—Indian hospitals were thus established at Boulogne, Hardelot and Montreuil, and Lieut.-Colonel T. Daly, R.A.M.C., was appointed for a time to act as Senior Medical Officer of the group in order to co-ordinate the work of distribution of sick and wounded to them and to arrange evacuation from them to England. The chief difficulty at first was found in arranging for Indian food supplies and for transport of the patients to Hardelot and Montreuil, and also in making provision for the burial or cremation of deceased

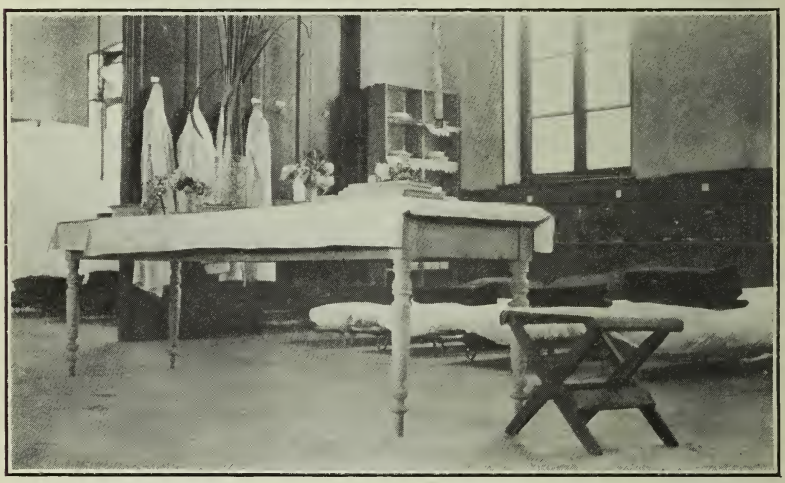
Indians according to their rites, but these difficulties were overcome, and the working of the hospitals went on smoothly and well during the whole period of their stay in France. On some occasions ambulance trains brought Indian sick and wounded direct to Montreuil by way of St. Pol ; but as a rule the Indian patients were brought to Boulogne Central Station, where arrangements were made for their reception. The more serious cases went to the Meerut Stationary Hospital. A motor ambulance convoy was organized for taking others to Hardelot, and three carriages, one fitted for lying down cases, were prepared and attached as required to local trains running from Etaples to Montreuil for conveyance of patients to the Lahore General Hospital. According to Hindu rites it was important that cremation should be carried out near water, and arrangements were made near the seashore at Hardelot under the supervision of a Brahmin, the senior sub-assistant surgeon, Rai Sahib Hao Pershad, of the Secunderabad General Hospital, who undertook the duties.

Advanced Depôts of Medical Stores.—The two advanced depôts of medical stores sent to the front, namely the Meerut and Lucknow depôts, went to Chocques and Lillers respectively, the former towards the end of October, and the latter, which had not arrived in Marseilles until the 11th November, shortly after disembarking. There was considerable difficulty at first in dealing with medical and surgical supplies. The advanced depôts arrived with a comparatively small amount of material for surgical dressings and were at first at a loss to know how to replenish, especially as no base depôts had come from India. Eventually, however, arrangements were made by which these Indian advanced depôts of medical stores were supplied by indent on the British Expeditionary Force base depôts.

The Clearing Hospitals.—The clearing hospitals accompanied the Lahore and Meerut divisions and the Indian cavalry divisions to Flanders. The Lahore Clearing Hospital, after working at first in Bailleul from the end of October to the second week of November, was transferred to Merville and from there to Lillers a fortnight later. The Meerut Clearing Hospital was sent to Bethune at the beginning of November. Pending its arrival No. 6 Stationary Hospital had been sent to act as a clearing hospital for Indians at Bethune and arrived there on the 31st October. It was, however, immediately replaced by the Meerut Clearing Hospital, which, after working in Bethune for three or four days, had to be withdrawn to Chocques

owing to the shelling of Bethune by enemy artillery. The Meerut Clearing Hospital remained at Chocques during the rest of the year. The Lucknow Clearing Hospital arrived with the Indian cavalry divisions and was disembarked at Marseilles on the 16th November. At first it was retained at the base at Rouen until the 26th November when it was ordered to Lillers and opened at St. Venant at the beginning of December 1914.

The Field Ambulances.—The field ambulances with the Lahore and Meerut divisions were distributed along and in



Interior of a portion of an Indian Casualty Clearing Station.

front of the road leading from Bethune to Estaires. The impression that the work of the stretcher bearers would break down was not justified, for from the very first the rank and file of the Army Bearer Corps proved themselves both courageous and efficient and capable of carrying on their duties without any strengthening whatever from the R.A.M.C. They were much exposed to sniping, and had generally to carry on the work of collecting wounded after dark. One of their number died of wounds received on the 7th November. Their work was enthusiastically praised by all the officers of the Indian field ambulances who commanded them, and Surg.-General Macpherson brought these facts specially to the notice of the G.O.C., Indian Corps, and the A.G. at G.H.Q. on the 8th November.

At first the general working of the field ambulances and clearing hospitals, owing to lack of training and to insufficient arrangements in anticipation of large numbers of wounded, led to considerable confusion and discomfort, but these conditions rapidly improved as soon as the officers realized the necessity of making the best use of local resources and organizing for work in the same manner as the clearing hospitals and field ambulances of the British Expeditionary Force alongside them. In fact, officers of the R.A.M.C. and I.M.S. and warrant officers of the Indian subordinate medical department displayed, in many instances, remarkable initiative and ingenuity, and in the course of time the Indian medical units both at the front and at the bases reached a standard of efficiency and comfort in every respect equal to the medical units of the British Expeditionary Force.

Voluntary Aid.—All the commanders of the Indian medical units had been provided with money on leaving India by the Indian Relief Fund, which enabled them to obtain by purchase various articles in order to add to the general appearance and comfort of their units. An Indian Soldiers' Fund for the supply of stationery, illustrated papers, Mahommedan and Sikh religious books, and comforts, had also been opened in England; and Sir Walter Lawrence, who had been appointed by Lord Kitchener to watch the medical services for Indians, arranged for the publication of a war journal in Urdu for circulation amongst the sick and wounded.

Medical Situation at the end of 1914.

At the end of 1914 the situation of the medical units of the Indian Contingent was as follows:—

At Marseilles (Sea Base) ..	.. The Lahore British General Hospital and the Lahore Indian Stationary Hospital.
At Orleans (Advanced Base)	.. One section of the Meerut British General Hospital, one section of the Lahore Indian General Hospital, and the Lahore Advanced Depôt of Medical Stores.
At Rouen (Base Depôt and Convalescent Base).	One section of the Meerut British General Hospital forming an Indian Convalescent Depôt.
At Montreuil (Hospital Base)	.. The Lahore Indian General Hospital (less one section at Orleans), and the Lahore X-ray Section.
At Hardelot (Hospital Base)	.. The Secunderabad Indian General Hospital and the Secunderabad X-ray Section.

At Boulogne (Hospital Base)	.. The Meerut Indian Stationary Hospital and the Meerut X-ray Section. The Rawal Pindi British General Hospital organized as a British unit.
At Lillers	.. The Lahore Clearing Hospital and the Lahore Advanced Depôt of Medical Stores.
At Chocques	.. The Meerut Clearing Hospital and the Meerut Advanced Depôt of Medical Stores.
At St. Venant	.. The Lucknow Clearing Hospital.

The Indian divisions had then handed over their sectors of the front to the Ist Corps, and were withdrawn into rest areas in the neighbourhood of Lillers. The cavalry field ambulances were further back in villages south of the Aire-Lillers road.

The subsequent history of the medical services of the Indian Contingent in France becomes merged into that of the medical services generally during the different phases of the operations on the Western Front. Both the Lahore and Meerut Divisions left France for Eastern theatres of war at the end of 1915.

The Indian Cavalry Divisions remained in France until 1918. They formed an Indian Cavalry Corps until the spring of 1916, and were then absorbed into the Cavalry Corps as the 4th (Indian) and 5th (Indian) Cavalry Divisions. They left France for Egypt in March and April, 1918.

The only Indian medical units then remaining in France were the Lucknow Casualty Clearing Station and the Lahore General Hospital which provided for the sick and wounded of the Indian drivers and ammunition columns and the Indian Labour Corps until the end of the war.

CHAPTER VI.

THE MEDICAL SERVICES WITH LABOUR CORPS.

TOWARDS the end of 1915 it was decided to form labour companies and battalions for service abroad, and the employment of labour units as distinct from combatant units from that date onwards underwent a process of enormous expansion and included not only white labour but also coloured labour from all parts of the British dominions and protectorates and allied countries, from South Africa, India, Egypt, West India, Fiji and China. European labour was also obtained from Portugal and Italy.*

Labour of this kind was employed in a variety of ways, at docks, in forestry, railway construction, and construction work generally, in depôts of all kinds on the L. of C. and army areas, and in the repair of roads, construction of trenches and other defensive works. White labour units had a strength of 2,593 officers and 310,401 other ranks at the time of the armistice. The strength of the coloured labour units varied from time to time but at the end of 1917, when it was at its maximum there were approximately 1,000 officers and 102,000 other ranks. Labour corps thus formed a large army of over 3,000 officers and 400,000 men.

The original organization decided upon in February 1916 was for three labour battalions to be sent to France composed of men medically fit for work on the Continent and classified fit for labour. Each battalion was to have a strength of 1,039 and included a medical officer with a cart for medical equipment and two of the rank and file under his orders, one of whom was employed as the driver of the medical cart.

The labour battalions from the United Kingdom were rapidly increased during 1916, and in April 1917 were formed into a Labour Corps, which was organized into labour company units, labour group headquarters, depôt labour companies and labour battalions. The existing labour battalions were broken up and their companies formed into groups, the group headquarters being found from the headquarters of the infantry

* Two labour battalions were formed in April 1918 of troops of Russian nationality in the Eastern and Western Commands at home.

labour battalions. The officer commanding a group headquarters was responsible for the discipline, administration, and interior economy of the labour units in the district allotted to the group. Labour battalions were no longer formed for service in France but only for civil work in government departments, local authorities and civil firms engaged on government contracts, and not necessarily for military purposes.

In this new organization each labour company with a total strength of 509 included a medical officer with two men under him as in the case of a labour battalion, but no medical officers were attached to companies administered by group headquarters, the medical officer attached to group headquarters with two men under him being placed in medical charge of the units of which the group might be composed. The number of labour group headquarters so formed for service in France at that time was forty, but in May 1917 the number was increased to seventy-two, of which, however, two group headquarters, Nos. 41 and 42, were allotted to Army Headquarters, Salonika.

In November 1918, just before the armistice, prisoners of war companies of the Labour Corps were also formed for service in France and Italy.

With regard to the medical arrangements for the European or white labour companies employed on the Western front, these did not differ in any material respect from the general arrangements for British troops, but with regard to coloured labour, special arrangements had to be made.

For them special hospitals had to be organized and special conditions determined with regard to the localities where they could best be employed having due regard to conditions of climate and racial liability to disease.

Six coloured labour companies were employed in France early in 1917, and five native labour contingent hospitals had been organized by the end of the summer, as follows :—

Dieppe	..	No. 1 South African Native Labour General Hospital.
Boulogne	..	No. 2 „ „ „ „ „ „
Noyelles	..	Chinese General Hospital.
Rouen	..	Cape Boys Hospital.
Marseilles	..	Egyptian Hospital.

In addition to these there were sections of British hospitals set aside for the treatment of coloured labour. Thus at Calais there was a section for 100 beds at No. 30 General Hospital for Egyptians, and at St. Omer a section of 140 beds at No. 4 Stationary Hospital for Chinese.

In September 1917 it was proposed that these hospitals, with the exception of the last two mentioned sections, should be designated by consecutive numbers as follows :—

Dieppe	..	No. 1 Native Labour General Hospital.
Boulogne	..	No. 2 ,, ,, ,,
Noyelles	..	No. 3 ,, ,, ,,
Rouen	..	No. 4 Native Labour Stationary Hospital.
Marseilles	..	No. 5 ,, ,, ,,
Havre	..	No. 6 ,, ,, ,,

These designations were approved by the War Office in a letter of the 6th November 1917.

Owing to the large numbers of Chinese employed in the coloured native labour contingents at the end of 1917, when there were 54,000 Chinese in France, and when 150,000 Chinese labourers in all were expected, proposals were made for increasing the size and numbers of hospitals for Chinese, and early in 1918 No. 3 Native Labour General Hospital at Noyelles was increased from 1,040 beds to 1,500, and a second tented hospital for Chinese at Noyelles for 1,500 beds was authorized.

In addition to these hospitals, at all camps of native labour contingent companies there were small detention hospitals usually of thirty beds each.

The Indian labour contingents were treated in an Indian section of the Lucknow Casualty Clearing Station at Frévent in the Third Army area, and as a rule, the Indian natives, of whom there were 25,603 at the end of 1917, were mainly concentrated in the Third Army area, and in the area south of and including Abbeville. The general policy at that time was to allot to army areas only Indians and Chinese. The Chinese were allotted to the First and Second Army areas and to the L. of C. areas north of a line drawn from Fécamp in the Dieppe area to Amiens. South Africans were employed in the Havre, Rouen and Abancourt areas, and the Egyptians in Marseilles, the number of the latter being at the end of 1917 only 1,000.

For each of the large groups of coloured labour, a senior medical officer was appointed who knew the language and the habits of the men. For this purpose Lieut.-Colonel P. Stock was appointed medical adviser for the South African Native Labour Corps, with Major Walsh as senior medical officer ; Lieut.-Colonel J. B. Jameson as medical adviser for the Indian Labour Contingent ; and Lieut.-Colonel Gray for the Chinese Contingent.

The following are some of the more salient points in connexion with the medical services and the health of the different classes of labour in France.

Canadian Forestry Corps.

The Canadian Forestry Corps was formed of forestry companies, each with a strength of 170 and a headquarters. They were distributed in districts over a very wide area in France, including such distant forests as those of the Jura and Vosges and the neighbourhood of Bordeaux. They commenced to arrive in France in 1916, and in December of that year a headquarters and two companies were employed. By December 1917 the strength of the Canadian Forestry Corps was about 10,000.

Owing to the fact that the companies were working over large and sparsely populated areas, remote from hospitals and medical assistance, it was difficult to make suitable arrangements for medical attendance, and adherence to the War Office establishment of a labour company was not possible. The detachments were allotted to districts and to a central group, and to each district one medical officer was appointed with a non-commissioned officer, trained in first aid and sanitation, in each company. A group hospital, with the medical officer of the group in charge and a staff of one non-commissioned officer and six other ranks, was opened at La Joux in the Jura and also in the Bordeaux district. The headquarters of the central group was at Conches-en-Ouche-Eure, where there was also a group hospital. These group hospitals were 50-bedded detention hospitals. The general administration came under the D.M.S. of the L. of C., and chiefly in the area of the D.D.M.S., Rouen, and A.D.M.S., Marseilles. Detention hospitals were also opened as required at other centres. The personnel was obtained from the Canadian Army Medical Corps.

The heavy work of these forestry detachments demanded an exceptional ration, and at one time the energy value of the ration given to them in France reached a high standard of between 7,000 and 8,000 calories. The chief difference between the arrangements of the medical services for the Canadian Forestry Corps and other labour battalions was in the provision of dentists. Up to July 1917 one dental officer, one serjeant mechanic and one serjeant orderly had been authorized for the Canadian Forestry Corps, but a demand was then made for five additional dentists, five additional mechanics and five orderlies, and later on, in December 1917, the Director of Dental Service at the headquarters of the Canadian Expeditionary Force in London noted that some 15,000 dentures and 15,000 dental operations had been required for the Canadian Forestry Corps in France. Consequently

he demanded dentists and dental mechanics for the various groups according to the strength of the personnel in them; so that eventually the dental strength of the Canadian Forestry Corps was 13 dental officers, 13 mechanics and 13 orderlies. No special information has been recorded regarding the health of the corps, but the men were of considerably more advanced age than those of the combatant ranks of the Canadian divisions, and it was thought that special dental supervision was required in order to maintain their health.

Indian Labour Corps.

Early in 1917 arrangements were being made to raise a labour corps of 20,000 men in India for service in France. Recruiting had already commenced and the first 6,000 were expected to sail about the middle of April. Marseilles was selected as the base depôt for Indian labour, and arrangements were made there for the reception of 20,000 who had been reported to have left India for France by June 1917.

At that time the number of sick from the Indian Labour Corps in the base depôt was calculated to be 3·5 per cent., and the maximum hospital accommodation then at Marseilles was 600 beds for Indian troops and followers, 300 for the Indian Labour Corps, and 500 in an Indian convalescent depôt. With only 4,400 of the Indian Labour Corps actually in France at the time, there were only 145 beds vacant in the Indian Labour Corps Hospital at Marseilles and 390 in the convalescent depôt. The necessity for increasing accommodation was therefore urgent and the base commandant at Marseilles proposed to hand over the entire Indian depôt camp at La Barosse for Indian labour sick and convalescents, and place the depôt elsewhere. If necessary he was also prepared to hand over the South African native labour camp at Musso for Indian labour sick, thus giving a total accommodation for 2,000 sick and convalescents from Indian troops, followers and labour. It was then proposed that there should be two Indian hospitals at Marseilles, one for severe cases by the expansion of the Lahore General Hospital already there to 800 beds, and one of 700 beds at La Barosse camp for the slighter cases. These proposals, however, were mainly due to the fact that hospital ships had ceased to run from Marseilles with Indian invalids, so that the number of sick accumulating in Marseilles was considerable, and would continue to increase if it were impossible to resume the sailing of hospital ships. The hospital ships "Glengorm Castle" and "Formosa"

had been lying at Marseilles for two months previous to July 1917, and instructions were sent by the War Office to relieve the congestion at Marseilles by utilizing these ships. This was done and between seven and eight hundred invalids left Marseilles for Egypt and India by the end of July 1917, so that it was no longer necessary to carry out the proposals for enlarging the hospital accommodation there.

The Indian labour companies were recruited chiefly from hill tribes, including Pathans from the north-west frontier, and Lushais, Nagars, Manipuris and others from the Eastern Himalayas. Some had also been recruited from the plains of India, but they did not stand the climate well, and at the end of 1917, the Indian Government was asked to send hill men only. Companies of recruits from the plains were then kept on duty at Marseilles only.

A considerable proportion of the drafts were old, debilitated men, and there was a high death-rate amongst them. A special inspection was consequently made in October 1917 of all the companies, in order to eliminate those who were unable to stand the ensuing winter in France, and as a result about one thousand were sent to Marseilles as unfit for service, chiefly on account of old age, rheumatism and debility.

Altogether fifty-seven companies of the Indian Labour Corps were in France in February 1918, but after the German offensive of 1918 they were rapidly reduced to twelve by June. Immediately after the armistice all except two or three companies had been repatriated. The companies were chiefly employed in the Third Army area in 1917, at work on the Somme battlefields, at Guillemont, Trones Woods, Mametz, Fricourt, Maricourt and on the Plateau. The Lucknow Casualty Clearing Station at Peronne-la-Chapelette received the sick, and a section for Indians was also opened in connexion with No. 6 Stationary Hospital at Frévent. Detention huts of twenty-five or more beds were opened at group headquarters, and as there were about 12,000 Indian labourers in the Third Army area in July 1917, the D.M.S. of the army proposed converting No. 38 Casualty Clearing Station, then occupying the huts constructed by the French as an *hôpital d'évacuation* near Bray, into a hospital for Indians.

Several companies were also employed on the lines of communication. Thus towards the end of 1917 there were four companies at Abancourt, six companies in the area of the Independent Air Force, south of Nancy, and two companies in forestry camps in the neighbourhood of Lyons. Detention

huts were provided for these, and 300 beds were added to the sections of the Lahore General Hospital at Rouen. The Native Labour Detention Hospital at Abancourt was also increased in January 1918 to sixty beds, with an additional twelve beds for infectious cases.

At first no medical personnel other than those for menial services were available in India, and arrangements for suitable medical attendants had to be made in France. One medical officer and one sub-assistant surgeon, with four other ranks, were required for each group of four companies, and for the expansion of the Lahore General Hospital at Marseilles and Rouen three medical officers, six sub-assistant surgeons and 98 other personnel were necessary. The total requirements therefore for 20,000 of an Indian labour contingent were 10 medical officers, 40 sub-assistant surgeons and 130 other personnel. The terms of engagement for personnel obtained in India were one year or for the duration of the war.

When Lieut.-Colonel J. B. Jameson, as already noted, was appointed Senior Medical Officer of the Indian Labour Corps, at the end of July 1917, his duties were confined to work in the Third Army area, but on the 17th November of the same year he was authorized to visit Indian labour companies on the lines of communication in an advisory capacity, reporting to the D.M.S., L. of C. Eventually his advisory duties extended to all areas where Indian labour was employed. Consequently in July 1918 he was officially attached as medical adviser to the headquarters of the Military Adviser on Indian Labour, Lieut.-General Locke Elliot.

Under this general organization for medical attendance towards the end of the war also came a large contingent of Indian transport drivers and gunners who took the place of British drivers in divisional ammunition columns. Many remained in France until long after the armistice, and it was not until July 1919 that the sections of the Lahore General Hospital at Rouen could be transferred to Marseilles. Arrangements were made then for Indian sick in the north of France to be received into No. 26 General Hospital at Etaples, where 200 beds were set apart for them.

Mumps, measles and respiratory troubles were the chief complaints amongst the Indian labour companies, but otherwise there was no special outbreak of disease except beri-beri, which occurred in a Manipuri company and elsewhere in the Third Army area in January 1918, owing to the issue of

polished instead of unpolished rice. There were many complications in arranging standard diets in these Indian labour companies, as some were meat-eaters and some were not. It was impossible to arrange a standard diet for all. The Pathans engaged in lumber work required a ration of high calorie value, and their meat ration was increased from 4 oz. to 8 oz. The Nagars and Lushais were meat eaters and depended upon rice more than on atta and dhal, the customary food of other Indians. Consequently for these a special ration scale called the Nagar ration was adopted, giving a calorie value of between 3,700 and 3,900. It consisted of :—

Rice	12 oz.
Atta	16 ,,
Meat	5 ,,
Fresh vegetables	8 ,,
Ghi	1 ,,
Dhal	1½ ,,
Condensed milk	1 ,,
Sugar	1 ,,

with a ration of salt, tea, chillies and pickles.

Other labour companies than the Nagar and Lushai hill men received the standard ration of Indian followers.

British West India Regiments.

On the 22nd August 1916 the D.G.M.S. was informed that two battalions of the British West India Regiment would shortly arrive in France from Egypt. They were to be employed as ammunition supply companies for the heavy siege artillery. Other battalions arrived in France during 1917 from the West Indies as reinforcements ; and a contingent of the Bermuda Garrison Artillery also came to France. Their medical arrangements were to be similar to those of other British combatant troops both as regards hospital accommodation and rations, but it was found that the West Indians required a more satisfying and filling food than the European soldier and consequently rice and flour of approximate nutritive value were given in lieu of other less bulky constituents.

The base of the West Indian Contingent was at Havre, and the battalions were accompanied by their own medical officers.

Medical officers, as a rule, were officers who were district medical officers or in general practice in the West Indies, and received temporary commissions in the R.A.M.C.

The men of these British West India battalions were recruited in practically all the British West India colonies, and were in two groups, the colonies of Group " A " being

Trinidad, British Guiana, Barbadoes, St. Lucia, Grenada, St. Vincent, Antigua, Monserrat, St. Kitts and Dominica ; and of Group " B," Jamaica, Bahamas and British Honduras.

On the 6th October 1917 the medical officer of the 10th Reserve Battalion British West India Regiment, which was arriving at the base depôt at Havre, reported that of the total strength of 1,024, four died on the voyage and 294 were on the sick list. On arrival 180 had to be carried to camp. Some who had been unused to boots were quite unable to walk, and the cold and wet, even on board ship, appeared to have affected their feet, cases of dry gangrene and " trench foot " having already been reported. The Base Commandant consequently considered that it would be impossible to use these men at Havre during the winter. They appeared to be peculiarly susceptible to pneumonia, and three out of the four deaths and a large proportion of the sickness were due to that cause. There was also an outbreak of mumps in November 1917.

It was quite evident that the West India troops could not stand the climate in the north of France. Some of them had to undergo amputation of both feet for severe " trench foot " in the winter of 1917–18. Three such cases were reported from No. 3 Canadian General Hospital, Boulogne, on the 26th December 1917, and orders were issued to send them to England for admission to the 1st Western General Hospital, Liverpool. In February 1918 four similar cases were reported and transferred to England, and later on three additional cases were reported from No. 3 Canadian General Hospital. Other cases of severe " trench foot " continued to occur during the winter, and instructions were issued on the 20th April 1918 by the D.G.A.M.S., War Office, to the D.G.M.S. in France that in future all amputation cases amongst officers and soldiers of the British West India Regiments should be transferred to the 1st Western General Hospital, Liverpool, for the necessary fitment of artificial limbs before returning to the West Indies

Except in the case of those requiring orthopædic treatment, invalids of the British West India Contingent, however, were not evacuated to England but were repatriated direct from France. Their interests were looked after by a West India Contingent Committee in London. As a rule they were repatriated from Marseilles.

British West India regiments had been serving in Egypt and Palestine for over three years from 1915 onwards, and those awaiting repatriation were brought to Marseilles and admitted to general hospitals there. They suffered severely

from the cold of France, the climatic change from Egypt and the West Indies being very considerable. This was specially the case during the demobilization period at the end of 1918 and beginning of 1919, and there was a considerable amount of restlessness and discontent amongst those who were retained at Marseilles previous to repatriation. Everything possible, however, had been done for their comfort by means of stoves and blankets, and they were treated more liberally than other patients in the matter of diet, extra rations of sugar and comforts, such as chocolates, having been provided. Several were suffering from chronic diseases or acute illness. These made no progress and deaths occurred with demoralizing effect on the others. Their nursing was carried out by N.C.Os. and orderlies, and their wards were supervised by a trained sister in charge, but those who were acutely ill were moved to wards nursed by sisters. They were all, however, craving to be placed on board ship to take them home, and this alone would satisfy them. Consequently the D.G.M.S. urged that arrangements for their early evacuation to the West Indies should be carried out.

Reinforcements coming from Egypt direct to France disembarked at Brest, but invalids from the West India battalions in Egypt came to Marseilles for repatriation and were retained there until transport to the West Indies could be provided. Those awaiting repatriation in the north of France were assembled at Rouen and Havre ; others, however, were retained in France pending orders for embarkation from ports in the United Kingdom.

Unfits and invalids awaiting repatriation to the West Indies were also sent back in transports arriving with British West India units at Brest.

Invalids from Egypt at Marseilles had also to take advantage of the sailing of ships from Brest and were concentrated with the other invalids at Rouen and Havre in time to embark prior to the sailing of the transport. Transport for single invalids was, however, occasionally obtained from time to time in transports sailing from British ports. There was no regular arrangement for the running of hospital ships or transports between the West Indies and France or the United Kingdom.

Amongst other diseases from which the West India troops suffered were outbreaks of rose measles, chickenpox and enteric. Venereal disease was also common. A very large percentage were also the subjects of ankylostomiasis. Anti-typhoid

inoculation was only partially carried out, and none of the men appear to have been re-vaccinated against smallpox since childhood. About 20 per cent. were infected with various forms of ringworm.

A battalion arrived in France on the 31st July 1917, and the Adjutant-General reported on its unsatisfactory medical condition as regards protection against typhoid and smallpox to the War Office on the 16th August, requesting that steps might be taken to prevent other troops in a similar condition being despatched to France. This was communicated to the Governor of the Windward Islands by the Secretary of State for the Colonies on the 7th September on the facts being represented to him by the Army Council. Arrangements were then made to obtain anti-typhoid vaccine material from the United States and to ensure that the next draft of recruits should be inoculated and re-vaccinated.

There was an outbreak of measles in the 9th Battalion and it was segregated at Boulogne in August 1917. It was proceeding at that time to the Fifth Army. It arrived at Boulogne on the 13th August. The men mostly came from Jamaica, where measles was prevalent in one of the camps at Port Royal, so much so that the contingent from the camp which should have been embarked was left behind, and a contingent obtained from another camp took its place. On the voyage from Halifax twenty-one cases of measles occurred and were sent to hospital. The battalion landed at Liverpool and entrained direct for Folkestone. No notification was received at Boulogne that measles was prevalent in the battalion, and it was put into camp with large numbers of other troops. The facts were reported to the War Office by the Adjutant-General on the 5th September 1917, but the War Office in reply considered that as all cases had been isolated from the beginning, the others were not considered to be contacts. Many venereal cases were included in the troops embarked with this 9th Contingent. Recruiting had declined greatly in Jamaica, and in order to acquire sufficient men to form the 9th Contingent venereal cases were accepted and embarked. A considerable correspondence took place with regard to these venereal cases, and there appears to have been a want of co-operation between the staff and medical officers in Jamaica with regard to the cases being embarked. One hundred and twenty-seven had been examined by the medical officers and put aside " from embarkation," but apparently the words " from embarkation " were read as " for embarkation." They

had been sent to hospital for treatment, and it appears that they were embarked direct from the hospital to the ship without the knowledge of the medical officers, as they were cases likely to be cured in a reasonable time, and on the understanding that they had been cases put aside "for embarkation." The G.O.C. the troops in Jamaica took upon himself the responsibility of sending them to France, in view of the expense of paying, feeding and quartering in Jamaica men who were unfit all through the winter. Approximately 20 per cent. of the battalion were suffering from venereal diseases.

The 3rd and 4th West India battalions serving then with the Fourth and Fifth Armies suffered unduly from exposure on the 1st December 1916, and it was decided to remove them to a station on the lines of communication where they could be accommodated in huts, Boulogne being one of the places selected. The sick at Boulogne were treated in No. 2 Canadian Stationary Hospital. They suffered severely from respiratory trouble, and they were specially liable to pneumonia and frostbite. During the month of November 1916 as many as 572 reported sick with sore feet, and 333 with bronchitis, so that 10 per cent. of the total strength were ineffective one month after they arrived at Boulogne, and it was considered that the climate of the north of France was unsuitable during the winter for these troops no matter how warmly clothed or how comfortable their conditions of living were made. They were in fact provided with three pairs of socks, two pairs of drawers and vests, fur and leather undercoats, and extra pairs of ankle boots.

The Adjutant-General had reported on the 7th September 1917 to the War Office with regard to the unsuitability of the climate of northern France in winter for the Bermuda Contingent of the R.G.A. and the six battalions of the British West India Regiment then in France. The normal requirements, however, of labour at Marseilles did not justify the retention of such a large number of men for duty at that port, and it was suggested that they should be placed at the disposal of the G.O.C., Mediterranean L. of C., for the winter months on the understanding that they became available to resume their duty at ammunition dumps by 1st April 1918. The only other alternative was to send them to Egypt, but difficulties in shipping prevented this. Consequently the Bermuda Contingent, R.G.A., and the British West India battalions were removed to Marseilles and to the Mediterranean

L. of C. during the winter of 1917–18. Some cases of cerebro-spinal meningitis occurred amongst them after arrival in Marseilles in February 1918.

The British West India depôt was transferred to Forges-les-Eaux in August 1918 in the Abancourt area, and a detention hospital of forty beds in large hospital marquees was arranged at this depôt.

On the 5th January 1919 apparently nine battalions of the British West India Regiment were at Taranto, and steps were taken to repatriate them by entraining them direct to Havre, bringing them in the first instance to the large convalescent depôt at Buchy, which was cleared for their reception. The base depôt of the West India Regiment was then at Serqueux, and arrangements were made for repatriating the men left in it at the same time.

South African Native Labour Corps.

A South African Labour Corps composed of battalions of natives of South Africa commenced to arrive in France towards the end of October 1916. The battalions were formed into four companies each. The first twenty companies had arrived by February 1917, and eight more companies by June. They were distributed at first partly to the armies and partly to the various camps and labour centres on the lines of communication in the Dieppe, Rouen, Abbeville, Etaples and Calais areas.

In the preliminary arrangements for the employment of South African native labour in France, the Government of the Union of South Africa was specially concerned with regard to the nature of the work and the localities where they were to be employed, as also with regard to the provision of hospitals and medical attendance, which it was emphasized should be entirely in the hands of personnel from South Africa. These negotiations took place during October 1916, when the first contingent of 10,000 natives was considered.

The headquarters of the corps was at Dieppe, and Lieut.-Colonel P. Stock, of the South African Medical Corps, was appointed as medical adviser.

A medical section of the corps was formed of medical officers, British warrant and non-commissioned officers, and native non-commissioned officers, ward orderlies and interpreters.

A medical officer was appointed to each of the camps, of which, in March 1917, there were fifteen, but as the number of

medical officers from South Africa was insufficient for all these camps at that time, five of the fifteen camps were provided with medical officers from the R.A.M.C.

Very careful arrangements were made in the construction of the camps in order to obtain the best sanitary results. Good huts were provided in winter, overcrowding was avoided as far as possible, the diet was on a liberal scale, and two complete sets of clothing, three blankets and a waterproof sheet were given to each man. Drying rooms were also provided. The localities for the camps were carefully selected, low-lying districts being avoided, and a high standard of sanitation was maintained.

The health of the corps consequently was throughout exceptionally good. It was carefully watched by the Government of the Union of South Africa, and exhaustive monthly reports had to be submitted showing the records of sickness and other details connected with the corps. Owing to the liability of the South African natives employed in the mines in South Africa to pulmonary disease, grave anxiety was felt with regard to tuberculosis and pneumonia occurring amongst them when they came to France, and the precaution was taken to inoculate the drafts not only against enteric but also against pneumonia. They were also vaccinated against smallpox before arrival in France.

In the spring of 1917 the companies employed in army zones were withdrawn to the lines of communication in order to replace white labour there and enable the latter to take the place of the coloured labour in the army areas.

The average monthly strength gradually increased from 10,583 in May 1917 to a maximum of 14,767 in September of that year. The numbers then gradually declined throughout 1918, the average for the months February to May being between 7,000 and 8,000, in June and July between 4,000 and 5,000, in August under 2,000, and in September about 600. The whole of the South African native labour had been repatriated by November 1918.

The sick were admitted into detention huts in each of the camps, and, if requiring hospital treatment, those from the companies in army areas were transferred at first to native wards in No. 4 Stationary Hospital at St. Omer and No. 4 Casualty Clearing Station at Varennes. Sick from the companies on the lines of communication were admitted into native wards of British hospitals in the area in which the companies were working. This arrangement, however, ceased

when the South African native labour companies were withdrawn from the army zones and when in the spring of 1917 two South African Native Labour General Hospitals were opened on the lines of communication, No. 1 for 500 beds at Dieppe, and No. 2 for 300 beds at Pont des Briques in the Boulogne area. An establishment for these hospitals was laid down, the 500-bed hospital having an establishment of 6 medical officers, a quartermaster, 12 British warrant and non-commissioned officers, and 112 native non-commissioned officers and other ranks. The 300-bed hospital had 4 medical officers, a quartermaster, 8 British warrant and non-commissioned officers, and 77 native non-commissioned officers and other ranks. They were designated respectively No. 1 South African Native Labour General Hospital, and No. 2 South African Native Labour General Hospital. The medical orderlies were engaged on a contract for one year, but there was considerable difficulty in replacing them after the expiration of their year's service, the pay offered being for first-class orderlies £4 10s. monthly, and for second-class orderlies £4 monthly. These orderlies, as a rule, were obtained through the South African Chamber of Mines.

The chief difficulty, however, was in finding personnel from South Africa for other than native establishments. When the South African native labour general hospitals were established there were only thirteen medical officers from South Africa available, of whom two were sick in England. All but three were employed in the various camps or in wards of No. 4 Stationary Hospital and No. 4 Casualty Clearing Station. There were also only twenty-seven white non-commissioned officers from South Africa available, so that reliance had to be placed on obtaining personnel from the R.A.M.C. There was no hope at that time of obtaining medical officers from South Africa. A large number of the medical section had been lost at sea on the 21st February 1917 in the transport " Mendi," which had been sunk on the voyage. Of 607 men on board lost in this way, 123 belonged to the medical section.

After the South African Native Labour General Hospitals had been opened the majority of the sick were admitted and treated there, but a certain number continued to be sent to wards in several of the British general hospitals, such as No. 4 General Hospital at Dannes Camiers, No. 30 at Calais, and No. 2 at Havre. Venereal patients also were sent to the venereal general hospital at Havre.

With regard to the repatriation of sick of the South African Native Labour Corps, arrangements were made for their being transferred to England for conveyance to South Africa in hospital ships or transports sailing from British ports, and in October 1917 an Army Council Instruction was issued laying down the procedure which had to be adopted. The numbers awaiting repatriation had to be notified to the War Office on the last day of each month, showing those requiring conveyance by hospital ship as cot cases or as non-cot cases, and those fit for conveyance by ordinary transport. On instructions regarding the date of their despatch to the United Kingdom being received, the men were sent to a Native Labour Concentration Camp at Folkestone prior to embarkation. In addition, medical personnel accompanied the invalids from France to England and to South Africa, although it had been pointed out that this arrangment would end in the depletion of native medical personnel in France, and R.A.M.C. personnel would have to take their place.

In addition to the South African Native Labour Corps, a labour battalion with an approximate strength of 1,000 was formed from Cape Boys, and there was an auxiliary horse transport company of Cape Boys The medical arrangements for these, however, were the same as for European troops, When they came to France a 50-bed hospital was organized for them at Rouen, a war establishment being approved for it by the War Office on the 14th October 1916. The establishment consisted of one R.A.M.C. officer, one staff-serjeant and six other ranks R.A.M.C., with ten Cape Boys for general duty.

The chief diseases were pulmonary diseases and tuberculosis. There was at one time a small outbreak of scurvy, which was quickly rectified by alterations in the diet and cooking. The health, however, on the whole was exceptionally good, the admission rate and death rate being equal to that of healthy British troops.

The Egyptian Labour Corps.

Notification of the despatch of an Egyptian Labour Contingent to France was communicated to the Commander-in-Chief in a War Office letter of the 21st March 1917. The contingent was to be formed into a camp headquarters and base companies at Marseilles numbering from 1,200 to 1,800, and 17 companies of 674 each, or about 11,500 in all, were intended for employment in British bases in northern France. Medical officers accompanied the detachments on transports to

Marseilles, but were to be returned to Egypt and not retained in France, so that the medical services had to be obtained from the British forces on the western front. However, one of the medical officers, Captain Foster-Smith, R.A.M.C., who had a knowledge of Arabic and experience with Egyptian natives, was included in the first draft, and the Egyptian military authorities gave permission for his being retained in France as medical adviser for the Egyptian Labour Corps. He was consequently appointed to do duty at the headquarters of the corps in Marseilles, where hospital accommodation for 300 beds was being provided at the Lahore General Hospital. A branch headquarters for the companies employed in northern France was established at Rouen. The drafts commenced to arrive in the latter part of April and in May 1917.

Amongst the special medical and sanitary provision for this contingent were suitable scales of clothing and rations. The contract was for six months, and it was decided that Egyptians should not be employed in northern France during the winter. Warning was given of the possibility of these labourers suffering from trachoma, bilharziasis, ankylostomiasis, the enteric group of fevers, dysentery, enteritis and malaria. Special attention was also to be paid to the state of vaccination against smallpox and enteric fever, and also the possibility of the introduction of typhus fever. The probability of large numbers arriving with acute or chronic trachoma and intestinal parasitic diseases was great, and the Egyptian authorities were unable to guarantee that these conditions could be eliminated from the drafts sent to France. Bilharziasis did not become very prominent as a cause of admission to hospital, but it produced a considerable amount of inefficient labour, and was made an excuse apparently for obtaining exemption from work. The chief condition requiring special attention was trachoma, from which a very large proportion of the men suffered. A special investigation was made into the incidence of this disease by the A.D.M.S., Sanitation, the Adviser in Pathology, and the Consultant Ophthalmologist at Boulogne and Calais on the 7th and 8th May 1917. Instructions were then drawn up with a view to preventing the spread of this disease and treating the men without interfering with their capacity for work or their hours of work. A special report on the subject was submitted by Colonel W. Lister, the Ophthalmic Consultant, on the 13th May, and the organization for the prevention and treatment of trachoma, not only amongst the Egyptians but also amongst the Chinese, amongst whom it was equally prevalent

was subsequently put into operation.* The extent of trachoma infection amongst Egyptians may be gathered from the result of the two inspections in May at Boulogne and Calais, where 2,417 men were examined. Of these 50 or 2 per cent. were found to be suffering from acute trachoma, and 340 or 14 per cent. from sub-acute trachoma, all of them in a condition liable to spread infection; 29 per cent. of the remainder were found to have signs of only quiescent trachoma; in other words, 45 per cent. of the 2,417 were suffering from or had had trachoma. A similar inspection was made by an ophthalmic specialist at Marseilles on the 3rd June 1917, when 635 men of an Egyptian labour company were examined, 39 or 6·1 per cent. had acute infection, 99 or 15·5 per cent. sub-acute infection, and 296 or 46·6 per cent. quiescent trachoma; in other words, 434 or 68·2 per cent. were suffering from or had had the disease.

With regard to other diseases no special information is available beyond the incidence of bilharziasis, as noted above, but one case of typhus fever was admitted to the Egyptian hospital in Marseilles from the base camp there on the 10th June 1917. The patient arrived in France from Egypt in March 1917 and remained in camp until early in May. He had been employed in the Lahore General Hospital as interpreter for the Egyptian labourers, who were at that time being treated there, remaining in it until the end of the month, when he was transferred to the newly established Egyptian hospital. At the latter hospital he was engaged in disinfecting patients' clothing until June 7th, when he was transferred again to the base camp. No cases of typhus fever had occurred in the camp or in the hospitals or in Marseilles, and it was extremely difficult to decide how the infection was acquired, but the possibility is that he was infected in connexion with the disinfection of clothing. The D.M.S. of the Egyptian Expeditionary Force had warned the War Office in a letter dated 2nd April 1917 of the possibility of sporadic cases of relapsing and typhus fever occurring amongst Egyptians. The majority of the transports were apparently lice-infested, and a few cases had already occurred after disembarkation of Egyptian labour in Mesopotamia.

Chinese Labour Corps.

The Chinese Labour Corps formed by far the largest contingent of native labour that came to France. The question of

* The details of these measures of prevention are fully described in Chapter XV, Hygiene of the War, Vol. II.

using Chinese labour in order to release British labour for employment at home was considered in August 1916, and following on this the arrangements for raising Chinese labour battalions were communicated by the War Office to the Commander-in-Chief, France, on 26th October 1916. The French were at that time already employing Chinese labour in munition factories. For the British the Chinese were to be recruited in North China, and organized into battalions at Wei-hai-wei. It was intended that 1,000 men would be sent in each of the months of November and December 1916, and afterwards about 4,000 monthly up to 15,000; but these numbers were immensely increased. They were formed into companies of 5 British officers, 19 British other ranks and 476 Chinese, or approximately 500 in each company. They were distributed for duty in army areas and on the lines of communication. Thus in September 1917 the distribution was in the First Army area 11 companies, in the Second Army area 8, in the Fifth Army area 11, and on the lines of communication 43; but the number of companies then rapidly increased, until in February 1918 there were 162, and from July to the time of the armistice 195 companies with a total strength of nearly 96,000.

The labourers were engaged for a term of three years, and consequently were retained in France after the armistice for general labour duty in connexion with clearing up the battle areas and dumps. In fact as many as 80,000 Chinese were being employed with the British in France and Flanders in May 1919.

The first contingent arrived at Havre on the 19th April 1917, and proceeded to Noyelles-sur-Somme, where the base depôt for Chinese was formed. The contingent formed a battalion of eight British officers and 1,083 Chinese; they had been conveyed to France by way of Canada and Liverpool. They were distributed for work at Dunkirk and Berguette in the First Army area between Aire and St. Venant. At that time a section of No. 4 Stationary Hospital at Arques in the St. Omer area, which had been set apart for the South African Labour Corps, became available, on the withdrawal of the latter from army areas, as a section for the Chinese working at Berguette, and a section of No. 30 General Hospital at Calais, which had also been receiving the sick of the South African Labour Corps, was set apart for the sick of the Chinese employed in Dunkirk or in the Calais area. Provision was made for the establishment of a central hospital at Noyelles,

and this was ready to receive sick in April 1917. Major G. D. Gray, afterwards with the rank of Lieut.-Colonel, R.A.M.C., was appointed to the charge of this hospital and also became the senior medical officer and medical adviser in connexion with Chinese labour.

As the numbers increased and as the companies were distributed both in army areas and on the lines of communication, detention hospitals in marquees or huts were provided, in addition to the central hospital and the two section hospitals referred to above. The central hospital at Noyelles had originally accommodated only 300. It was extended to 500 by the end of June 1917, in Adrian huts. At that time there were as many as 599 sick in the hospital at Noyelles, and steps were immediately taken to expand it to 1,000 beds, and subsequently to 1,500 beds. It was designated No. 3 Native General Hospital. Even this accommodation, however, was not sufficient, and early in 1918 a second hospital of 1,500 beds was authorized at Noyelles and the section of No. 30 General Hospital was increased to 300.

At that time, too, the section of No. 4 Stationary Hospital, Arques, had been cut down to the size of a detention ward, and was not suitable for the reception of Chinese. No. 59 General Hospital had been moved then from St. Omer to Moulles, in the neighbourhood of St. Omer, and a section of 300 beds for Chinese was allotted in it in place of the section at No. 4 Stationary Hospital.

In addition to the central hospital at Noyelles and other native labour contingent hospitals, detention wards were opened at the various camps where Chinese labour was employed, and in order to relieve the congestion in the hospital at Noyelles, as well as to give employment to Chinese who were capable of doing light work, a convalescent company for light duty was formed at Neuville, near Noyelles, for work in Crécy Forest, At that time there were about 285 suitable for employment in the light duty company.

With regard to personnel for medical service with the Chinese labour companies, there was no specific mention made at first of a medical officer accompanying each battalion from China, but the establishment of the battalion included an orderly to the medical officer and a sanitary squad of five. Provision had been made in the original arrangement for the establishment of a hospital of 1,000 beds, the medical charge of which was to be provided by the War Office, and British and Chinese doctors and dressers were to be obtained if possible

from China and Hong-Kong. The personnel for this hospital establishment was to provide the medical attendance during the voyage to France.

But before the contingent began to arrive in France, the war establishment of a Chinese labour company was issued similar to that of a labour company of the South African Native Labour Corps. A medical officer and two orderlies were attached to each group headquarters for the medical charge of the companies belonging to the group. The subordinate medical personnel, in addition to Chinese doctors and medical assistants engaged in China, consisted of Chinese dressers, of whom there were three classes, and, in addition to these, untrained coolies were employed in the detention huts and the other hospitals.

Most of the medical officers employed in Chinese group headquarters had been medical missionaries in China and complained of the class of dressers working under them. The dressers of the first class were obtained from men trained in mission hospitals in China and had a reasonable elementary knowledge of nursing, but only 10 per cent. of the dressers were of this class. The second class were those who had been doing coolie work in hospitals in China and had no knowledge of any practical value. Forty per cent. were of this class. The third class, to which 50 per cent. of those enrolled as dressers belonged, were merely coolies who had managed to get themselves enrolled in this class. Consequently it was arranged in July 1917 that recruiting for dressers in China should be stopped, as better results were obtained by selecting suitable men in France and training them for ward work. Detailed tests for the promotion of dressers from Class 3 to Class 2, and from Class 2 to Class 1, were then drawn up for guidance.

One feature of the medical arrangements in connexion with the Chinese was that when casualties or accidents occurred, it was necessary that two friends of the patient should accompany the man to hospital, and this was specially important in cases of serious accidents, as the Chinese became very suspicious in the event of the patient dying on his way to hospital, and they strongly objected to post-mortem examinations.

At first the accommodation provided for the Chinese was considered to be insufficient. They were allowed 25 square feet only in a small Nissen hut, and 14 men in a bell tent ; but on the urgent representation of the D.G.M.S. a definite allotment

of 40 square feet or 14 men to a small Nissen hut, and 10 men to a tent, was authorized for Chinese and other labour corps.

A standard ration of

Rice	1½ lbs.
Dried or fresh fish or meat	½ lb.
Vegetables	½ ,,
Tea	½ oz.
Nut oil	½ ,,

with an addition of 4 oz. of flour and 1 oz. margarine was accepted for Chinese labour companies. Unfortunately a considerable number of cases of scurvy, or what was afterwards proved to be beri-beri, occurred amongst them. Owing to inadequate supplies of fresh vegetables on the journey to France, some 50 per cent. of the first contingent arrived showing signs of scorbutic conditions, and in April 1917 there were as many as 500 cases under medical supervision at Noyelles. In May 1917, 100 cases of beri-beri were reported in the hospital at Noyelles as having been contracted on the voyage. At that time supplies of the unpolished variety of rice were not available in France. The rice ration was consequently reduced and bread or flour substituted for it. The fresh meat was increased, and sugar, bacon and cheese were added to the rations, giving the ration a value of some 4,300 calories. This high calorie value drew the attention of the War Office, and in February 1918 the Army Council suggested that the ration should be reduced to a calorie value of some 3,700.

Subsequently reports of the incidence of scurvy or beri-beri amongst the Chinese were of rare occurrence. Influenza attacked them severely in the summer and autumn of 1918, as many as 200 to 300 cases occurring in some of the companies. In January 1918 there was some anxiety lest pneumonic plague might be introduced into France, as it was reported to be prevalent in the Shan-Si province of China. Recruiting, however, was not permitted from any of the infected areas, and no cases were reported in France. One or two cases of leprosy came to notice early in 1918.

No. 2 Canadian Mobile Laboratory at Folkestone submitted a report to the Medical Research Committee on the relative incidence of intestinal parasites amongst the Chinese at the embarkation camp at Folkestone. As many as 88 per cent. of the cases examined were found to be suffering from *Ascaris lumbricoides* and 11 per cent. from ankylostomiasis, with a comparatively small number from other intestinal parasites.

There was an outbreak of mumps in December 1917. Steps were taken on the arrival of the contingent in France to have

Chinese labourers inoculated against enteric fever at the depôt at Noyelles, before they were drafted to the labour camps. But the chief point of interest in connexion with the Chinese, as also in connexion with the Egyptian labour companies, was the prevalence of trachoma amongst them. It was impossible to ensure that the men recruited for work in France should be free from this disease, but, although the men suffering from trachoma were not unfit for labour, the disease in itself was of a specially infective character, and it was necessary to adopt measures which would prevent its spread to the European population and troops in France. Consequently on the advice of the Consulting Ophthalmologist, Colonel W. Lister, the Chinese labourers were classified after inspection at Noyelles into (1) men who were infectious (a) in the acute stage, (b) in the sub-acute stage; (2) men who were non-infectious (a) those who had already had trachoma, (b) those who had never had trachoma.

Colonel Lister examined 1,430 Chinese at Calais and Dunkirk in May 1917 and found that 0·9 per cent. were suffering from acute trachoma, 3·8 per cent. from sub-acute trachoma, and that 2·3 per cent. were non-infectious but had had trachoma. From this classification developed an organization of trachoma treatment centres at Calais, Boulogne, Noyelles, Marseilles and elsewhere, and the formation of trachoma companies. Drafts arriving in France were divided into three classes of companies, designated "X," "Y" and "Z" companies. The "X" companies were clean or non-infectious companies, the "Y" companies were composed of men suffering from conjunctivitis probably in an early stage of trachoma, and the "Z" companies of those who were definitely suffering from trachoma.

In March 1918 a pamphlet was issued on the method of dealing with these companies and of diagnosing the affection. The companies themselves were formed in August 1917, but all the Chinese labour companies, clean or otherwise, were treated daily by a solution of 10 grains of boric acid and 2 grains of zinc sulphate in an ounce of water being dropped into their eyes, and all towels were to be periodically sterilized by boiling. The details of these methods of preventing trachoma in accordance with this organization are described in Volume II of the Hygiene of the War.

Some idea of the number of these trachoma companies may be gathered from the following distribution of Chinese "Z" and "Y" companies in May 1918. There were then 15½ "Z"

companies in all, 3½ at Boulogne, 2 at Calais, 3 at Vendreaux, 3 at Dannes Camiers, 3 at Seigneville in the Abbeville area, and one at Neuvillette; and of 9½ "Y" companies, 3½ were at Boulogne, 2 at Dannes Camiers, one at Calais, one at Seigneville, one at Beauprés, and one at Neuvillette.

It may be stated generally that the results were eminently successful, and not only was trachoma prevented but the men who were already suffering from it, especially those in the earlier stages, had the disease arrested. Very few cases had at any time to be sent to the central hospital at Noyelles for treatment.

Fijian Labour Contingent.

The Fijian Labour Contingent consisted of 2 officers, 5 white non-commissioned officers and 101 natives of Fiji. They arrived in Calais on the 5th July 1917, with Captain T. R. St. Johnston, an officer of the Colonial Service, in medical charge. They were employed at Calais continuously until moved to Marseilles on the 25th January 1918, where they remained until September 1918, when they were transferred by decision of the Army Council to Taranto.

From the point of view of work and discipline they proved extremely efficient and satisfactory, but they were particularly prone to respiratory diseases, and as a result there was a great deal of inefficiency from sickness, which was more or less progressive and was if anything greater after the removal of the company to Marseilles. In a report by Captain G. R. F. Smith, R.A.M.C., in charge of No. 8 Rest Camp at Marseilles in July 1918, some interesting facts connected with the health of the company were given. The daily average number of men sick or in hospital, month by month, was as follows:—

		Days lost.
1917.		
August	9·3 ..	290
September	9·7 ..	291
October	10·0 ..	311
November	4·8 ..	146
December	9·6 ..	299
1918.		
January	6·8 ..	215
February	26·1 ..	732
March	18·8 ..	587
April	13·1 ..	394
May	19·6 ..	608
June	16·8 ..	506

During this period there had been five deaths, two from pneumonia and three from tubercle. The high figures for February and May 1918 are accounted for chiefly by an

influenza epidemic which attacked the company during these months. There were only three cases of venereal disease amongst the men.

One specially marked feature was a considerable loss of weight during the period of their stay in France. Out of 86 who had been weighed on enlistment, 71 showed loss of weight, in 3 the weight remained stationary, and only 12 showed a gain of weight, the average loss per man throughout the company being 6·4 lbs. A few of the men attributed the causes of unfitness to change of food, others to change of climate and to dust. In Fiji they depended largely upon vegetable food, as much as 8 to 10 lbs. being allowed to labourers daily, whereas in France the ration of vegetables was only 8 oz. although they were allowed 24 ozs. of bread in addition. Fiji is almost free from dust, and Captain Smith considered that the dust in Marseilles was to a great extent responsible for the number of cases of respiratory disease, together with the rapid change in temperature in the south of France as compared with the equable climate of the South Pacific.

In view of these facts a recommendation was made from the A.D.M.S., Marseilles Base, that the Fijians should be repatriated at an early date, although the Base Commandant, in forwarding this recommendation, stated that he was most averse to losing them as the company had always worked very well and been much superior to other troops both in their work and in their behaviour.

The Governor of Fiji had offered the services of a second detachment of 100 strong if their services should prove acceptable but, in the circumstances, no steps were taken to have a further contingent sent to France.

CHAPTER VII.

NURSING SERVICES AND MEDICAL SERVICES FOR WOMEN WORKERS.

THE nursing services on the Western front were composed of members of the Q.A.I.M.N.S. and its Reserve, of the T.F.N.S. and its Civil Hospital Reserve, of the Q.A.M.N.S.I., of the Military Nursing Services of Canada, Australia, New Zealand, South Africa, Portugal, and the United States of America and of members of Voluntary Aid Detachments, British, Canadian, Australian and American, and of the Almeric Paget Military Massage Corps. The harmonious manner in which all these elements worked together throughout the war speaks volumes for the tactful and able manner in which they were administered under the Director-General by the Matron-in-Chief, Dame Maude McCarthy. The constant moves, necessitated by the conditions of service, the eventual shortage of trained nurses, and the interests of individuals in matters of leave and appointments involved administrative talent of an exceptionally high order. The difficulties with which the nursing services had to contend were great, and the work was of a particularly arduous and trying character, more especially for those on duty in casualty clearing stations and ambulance trains during periods of battle, and in hospital centres during the influenza edipemic of 1918, and in those raided by aircraft in 1917 and 1918. Eloquent tribute has been paid and is due to the great courage and devotion of the members of the nursing services during these strenuous and tragic times.

Miss McCarthy accompanied the Expeditionary Force to France as Principal Matron, but at first was inadequately provided with office or office staff. It was not until the end of 1915 that suitable arrangements were made for her in the office of the D.M.S., L. of C., at Abbeville. She had then an authorized establishment and was eventually graded as Matron-in-Chief with a staff of one matron, one sister and eight members of V.A.Ds. The office of the Matron-in-Chief was separated from that of the D.M.S., L. of C., in August 1918 when Miss McCarthy went to Boulogne. This arrangement of a separate office gave her greater freedom of control and more adequate accommodation.

In January 1918 an inspecting matron of the Canadian Army Nursing Corps, Miss Ridley, was attached to the Matron-in-Chief's office. In the latter months of that year principal matrons were appointed to the staffs of Ds.M.S. of Armies to control the nursing services in the casualty clearing stations, but appointments had not been made to all the armies by the time of the armistice. Similarly, principal matrons were appointed to the larger hospital centres on the lines of communication.

The numbers under the Matron-in-Chief's control varied from time to time but increased automatically with the increase in the number of hospitals and the employment of members of the nursing services on duties other than those of actual nursing in the wards. In August 1914 there were 516 nurses with the British Expeditionary Force in France. The numbers steadily rose until, at the time of the armistice, 5,440 were employed on the lines of communication, and 954 in casualty clearing stations. The former figure included 1,754 trained nurses from the United Kingdom, 682 from Canada, 339 from Australia, 34 from New Zealand, 79 from South Africa, 33 from Portugal, 790 from the United States of America, 1,729 members of V.A.Ds. and 33 members of the Almeric Paget Military Massage Corps. In addition some 300 trained or V.A.D. nurses were employed in the voluntary hospitals. Of the 954 employed in casualty clearing stations, 175 were employed in the casualty clearing stations of the dominion contingents and belonged to their nursing services.

It will thus be seen that untrained or partially trained members of the V.A.Ds. formed a considerable proportion of the total. They were, however, employed only in the hospitals on the lines of communication, and a proportion was definitely fixed of three V.A.D. nurses as the equivalent of two trained staff nurses. Further, the establishment of the different types of hospital was determined as follows :—

Number of beds.	Matron.	Sisters.	Staff Nurses.	V.A.D. Nurses.	Total Nursing Staff.
520	1	16	13	20	50
1,040	1	26	23	35	85
2,500	1	40	42	63	146

After the armistice the number was reduced to 73 for a general hospital of 1,040 beds and to 27 for a stationary hospital. Many of the members of the V.A.Ds. became very proficient,

and steps were taken to distinguish those who had served with satisfaction in France for one year by a red proficiency stripe on the sleeve of their uniform, and in March 1918 by promoting by selection 100 to the grade of assistant nurses, distinguished by the letters " A.N." on the uniform.

The first detachment of V.A.D. nurses arrived in France on 17th April 1915, and from that time onwards they continued to arrive in batches of 25 to 50. But before then some had been employed by the British Red Cross Society in a hospital established at Malassise, near St. Omer, for cases of enteric fever amongst the Belgian civil population in the Ypres sector. When this hospital became No. 7 General Hospital in May 1915 they were withdrawn.

The V.A.D. nurses were paid by Government and employed on a definite contract for service overseas, the pay and emoluments amounting to £144 15s. or £157 15s. per annum, made up of £20 to £30 pay, £54 15s. field allowance, £65 for board and laundry, and £5 or £8 for uniform.

The Canadian contingent nurses began to arrive in France on 7th November 1914. Twenty then came over for duty with Imperial units and were followed by contingents for duty with the various Canadian hospitals and casualty clearing stations. The numbers reached a maximum of 828 in March 1918.

Similarly, when the Australian hospitals began to arrive in France from Egypt in the spring and early summer of 1916, a large staff of nursing sisters came with them, 91 being allotted to each general hospital. In addition, 111 members of the Australian Army Nursing Service were sent to France in February 1917 for duty in Imperial units, and others followed. They were distributed to the various hospitals, but in June of the same year the Australian authorities requested that they should be grouped under a matron of their own service in three of the Imperial hospitals. Consequently 100 were appointed to No. 25 General Hospital, 20 to No. 5 Stationary Hospital and 35 to No. 38 Stationary Hospital. This change was not popular and led to administrative embarrassment, as it interfered with the control of the Matron-in-Chief in distributing trained nurses to hospitals to the best advantage. It involved staffing these three units with trained nurses only and diminished the proportion of trained nurses in the other units to which these Australian nurses had been distributed previously and where their services had been much appreciated.

Nurses from the United States of America accompanied all the medical units staffed with American personnel, the first to arrive being those who accompanied the Harvard and Chicago voluntary units which formed the staffs of Nos. 22 and 23 General Hospitals in June 1915. Each of these units had a staff of one matron, 26 sisters, and 48 staff nurses. But in addition to the nursing staffs of the hospitals 186 American nurses were sent to France early in 1918 in two groups of what were called " casual groups " They were intended for duty in British units in army areas. They came without kits and difficulty was experienced in finding accommodation for them. They could not be sent to army areas as there were no units there to which they could be attached without interference with the trained staffs already in them. They were eventually absorbed in replacing casualties in the nursing staffs of the American units serving in British general hospitals.

The Portuguese nurses were employed in special huts for officers, attached to the Portuguese General Hospital which was opened at Ambleteuse, near Boulogne, in April 1918. The nursing services of the Portuguese General Hospital itself, however, were carried out by a matron and members of British nursing services.

The South African nurses came to France with No. 1 South African General Hospital in July 1916, and the New Zealand nurses with No. 4 New Zealand Stationary Hospital from Egypt at the same time.

The Indian Contingent had with it seventeen members of the Q.A.M.N.S.I. They formed part of the nursing staff of the three British general hospitals from India, but as a portion of these were converted into general hospitals of the Expeditionary Force, the members of the Q.A.M.N.S.I. were distributed, some to No. 18 Casualty Clearing Station, others to the Meerut Casualty Clearing Station, while two were appointed for duty as operation-room sisters in each of the Indian general and stationary hospitals. All were withdrawn from France in November 1915 except six who remained with the Lahore British General Hospital at Calais till the end of March 1916, when they too were withdrawn.

The general work of the nursing services extended from casualty clearing stations in army areas to the hospitals on the lines of communication, while their special work included administrative duties, embarkation duties, employment as anaesthetists, dietitians and in surgical laundries, as well as

in a variety of other work such as the nursing of civil sick and wounded and repatriated prisoners of war during and after the advance to victory.

On mobilization nursing sisters were only employed in general hospitals, but in a very short time a nursing staff was appointed to stationary hospitals, casualty clearing stations and ambulance trains. By the end of August 1914 two were attached to each ambulance train, the number being increased to three in May 1916. Appointments of nursing sisters to casualty clearing stations were definitely sanctioned when these units became stabilized at the commencement of trench warfare towards the end of 1914, but some were employed in railway rest stations during the retreat from Mons previous to this, as for example in No. 3 Casualty Clearing Station at Le Mans and in rest stations at Angers, Villeneuve St. Georges, and elsewhere on the Atlantic L. of C.

The number allotted to each casualty clearing station was at first five, but was raised to seven in May 1915. Additional nurses, however, reinforced this staff during battle periods, as many as 386, for example, having been attached to twelve casualty clearing stations of the Fifth Army in August 1917, or an average of thirty-two in each casualty clearing station. Nursing sisters were also appointed to certain advanced operating centres and officers' wards which had been established in connexion with the work of field ambulances.

When ambulance flotillas were formed in 1915 two nursing sisters were appointed to each barge.

Amongst the special duties assigned to members of the nursing services outside hospitals the most important were the duties connected with the reception of nurses arriving in France. Nurses disembarked as a rule at Boulogne, and early in the war the necessity of appointing an " embarkation sister " became obvious. Her duties consisted of receiving new arrivals, arranging for their transport and the care of their kits and heavy baggage, and providing billets or other accommodation. In January 1915 a nursing sister was appointed for sole duty as embarkation sister with an office in the Hôtel du Louvre, Boulogne, and in addition to the duties noted above she was responsible for notifying the arrival of nurses to the Matron-in-Chief, noting particulars of their service and qualifications, checking irregularities in uniform and obtaining movement orders. The chief difficulties which arose were in connexion with accommodation, storage of kits, and transport when large numbers arrived simultaneously.

Nurses arriving at Havre were comparatively few in number up to March 1918 and arrangements for their reception were made by the Principal Matron of No. 2 General Hospital, which was conveniently placed at the landing stage (Quai d'Escalade). But in the spring of 1918 large numbers commenced to disembark at Havre chiefly as reinforcements for the U.S.A. Army and for eastern theatres of war. As many as 2,717 passed through Havre for the American Army, and 1,121 to and 2,039 from eastern theatres of war in that year. Consequently an embarkation sister was appointed at Havre in March 1918 with duties similar to those of the embarkation sister at Boulogne.

Owing to the shortage of medical officers the question of training nursing sisters in the administration of anaesthetics was taken up by the D.G.M.S. in September 1917. The consulting physicians and surgeons, with the exception of one or two, considered that this duty could be performed satisfactorily by lady anaesthetists. In the general hospitals staffed by American personnel anaesthetics were regularly administered by trained nursing sisters, and this circumstance led to the suggestion that British nursing sisters might also be trained for that purpose. Arrangements were consequently made for courses of training to be commenced in January 1918. The course was open to all nursing sisters and members of V.A.Ds. who volunteered and were considered suitable. Each course was to last three months and be theoretical and practical; the first two months being in selected hospitals at the base and the last month in casualty clearing stations. The training in the latter included such practical subjects as the observation of patients before operation in order to judge the indications for and the choice of an anaesthetic, the administration of chloroform, ether, nitrous oxide and oxygen, general considerations as to the extent of anaesthesia and posture during an operation, and conduct in emergencies. The first course, which commenced in January 1918, was attended by 76 nurses in 25 different centres, the number trained at any one hospital at the same time being limited to three. Two courses were held and 159 trained. The Army Nursing Board at the War Office did not, however, sanction the employment of members of V.A.Ds. as anaesthetists, so these dropped out of the training. Also the D.M.S. of the Australian Imperial Force refused to sanction the employment of members of the Australian Nursing Service who had gone through the course of training as anaesthetists. The numbers

of those trained, available to replace medical officers, was consequently somewhat reduced. However, at the end of the first course 21 lady anaesthetists were appointed to hospitals at the base, and 46 to casualty clearing stations, thus setting free a considerable number of medical officers for other duties. The result, in the opinion of the consultants and surgical specialists, was an unqualified success. But the withdrawal of highly trained and competent nurses to act as anaesthetists threw an additional strain on the administration of the nursing services, more especially as it came at a time when nursing sisters had to be allotted permanently to special wards, such as those for fractured thighs, thus reducing the numbers available for relief and exchanges in other units.

In May 1918, following the example of the American and Canadian hospitals, members of the nursing services were appointed to act as dietitians in hospitals. Nursing sisters and V.A.D. members with a knowledge of cooking were asked to volunteer for these duties, and six were appointed to selected hospitals as an experiment. The results were highly promising, both from a financial and from a culinary point of view, but the scheme was not given a fair chance and fell through.

Another scheme which was entrusted to the nursing services was the management of a laundry for surgical dressings at Etaples in January 1918. This scheme, however, also lasted for a short time only, as the buildings which had been taken over were required in the following April for other purposes.

During the advance to victory and after the armistice several members of the British nursing services were employed in Belgian and French hospitals for the care of civil sick and refugees, and also in British medical units specially appointed to receive such cases. The patients were of all ages, both sexes, and with every kind of ailment. At Bruges, Grevillers, Arras, Douai, St. Pol. Cambrai and Valenciennes, work of this kind was carried out in hospitals staffed by British nursing sisters.

In 1917, owing to the decision that cases of fractured femur were to be retained in France, the D.G.M.S. applied in June for the services of members of the Almeric Paget Military Massage Corps. Ten arrived in September of that year and ten more in January 1918. Other parties arrived in September and October 1918 and at the time of the armistice there were 33 in France.

As in the case of medical officers the nursing services in the later years of the war felt the shortage of trained nurses.

There was always a difficulty in meeting emergent demands, more especially from Ds.M.S. of Armies during battle ; but to a certain extent this was obviated by a reserve of nurses being maintained at Abbeville, Boulogne, St. Omer, St. Pol, Frévent and Amiens, in readiness to meet emergencies.

The demobilization of the nursing services was ordered on 9th March 1919, when the nursing staff was to be reduced by one half, two thirds of whom were to be trained nurses. They were to be sent home at the rate of 400 weekly. The requirements then were 483 for the Army of the Rhine, and 577 with 253 members of the V.A.D. for France and Flanders. But, before demobilization orders had been passed, 2,475 members of the nursing services had left France. They were sent home through a demobilization hostel in Boulogne and a dispersal hostel at Folkestone.

The health of the members of the nursing services was on the whole good, but the constantly sick in hospital varied from 2 to 9·5 per cent. of the strength. The deaths from sickness were four in 1915, five in 1916, 12 in 1917, and 17 in 1918. The chief causes of mortality were cerebro-spinal meningitis and pneumonia, the former disease causing two deaths in 1915, and 10 in 1917, while the latter disease was responsible for 10 of the 17 deaths in 1918.

There were numerous casualties from enemy action. In 1915 and 1916 they were of a very slight character, but they were of exceptional severity in 1917 and 1918. In 1917 the number of these casualties was 44, of whom 3 were killed and one died of wounds during an aircraft raid on St. Omer, and one was killed by shellfire in the casualty clearing stations at Brandhoek, between Ypres and Poperinghe, on the night of 21st August. The casualties at St. Omer occurred in No. 58 General Hospital, when a staff nurse and two V.A.D. members, together with 18 patients were killed, and a staff nurse died of wounds, while two other staff nurses and 58 patients were wounded, during the night of October 30th and November 1st.* In 1918 the casualties from enemy action were 41, nine being killed, six of whom were members of the Canadian Army Nursing Corps. These casualties occurred during the

* Amongst the many heroic deeds of the nursing services during this trying time one may be specially cited on account of its tragedy and pathos. During the air raid on No. 58 General Hospital, Sister Climie of the T.F.N.S. remained in her ward, singing to a nervous patient, who had just been admitted from the front line, in order to try and calm him. She continued singing, quietly sitting on his bed, when the bombs were falling, until one fell in the ward and killed her. Her patient escaped uninjured, and afterwards testified to the calm courage and devotion of the sister.

bombing of No. 1 Canadian General Hospital at Etaples on the 19th May and of No. 3 Canadian Stationary Hospital at Doullens on the 29th May.

A ward for sick or injured nurses was opened at first in No. 2 B.R.C.S. Officers' Hospital at Rouen, but it was afterwards removed, in January 1915, to No. 8 General Hospital. Wards were also opened at No. 14 General Hospital, Wimereux, and afterwards in the Château Mauricien there, and at No. 24 General Hospital and in a villa at Etaples. In addition to these several convalescent homes were established.

In January 1915 H.R.H. Princess Louise handed over her villa in Hardelot Forest, near Boulogne, as a convalescent home for nursing sisters. Mrs. Bryce Miller opened another convalescent home for them at Paris Plage in June of that year, and in October 1916 Captain and Mrs. George Warre received convalescents in their villa at Roquebrune, near Mentone. There was also a convalescent home for them at Etretat, established by the B.R.C.S., and a convalescent home for Australian nurses, maintained by Mrs. Angus, near Captain Warre's villa in Mentone.

Nurses' hostels were opened at Boulogne and Rouen and a number of rest and recreation clubs was organized on behalf of H.R.H. Princess Victoria by Lady Algernon Gordon-Lennox at Wimereux, Etaples, Rouen, Abbeville, Le Treport, Boulogne, Calais, St. Omer, Paris and Deauville. The first club of this nature was, however, opened in March 1915 in Boulogne by Mrs. Robertson Eustace. Lady Algernon Gordon-Lennox remained in France as director of Princess Victoria's rest clubs from January 1915 to June 1919, after arranging for a club to be opened in Cologne.

The British Red Cross Society opened similar clubs for V.A.Ds. in 1918 at Boulogne, Dieppe, Rouen and Trouville, chiefly for the general service members of these detachments. These general service members commenced to arrive in France for duty as cooks, dispensers, clerks and cleaners in military hospitals in November 1917. By the end of December of that year 219 were employed in the hospitals at Rouen, Le Treport and St. Omer, and by August 1918 as many as 862 were employed in various hospitals. A few were also employed in other units. They were under the control of the principal matron or matron of the hospitals in which they were employed.

The medical services for the Women's Army Auxiliary Corps, afterwards Queen Mary's Army Auxiliary Corps, were

specially organized under a Chief Medical Controller, Dr. Laura Sandeman, who arrived in France in October 1917 and was attached to the Office of the D.M.S., L. of C. The women of this corps were employed in L. of C. units, messes and institutions in the same manner as the General Service V.A.D. members in medical units. The strength of the Corps with the British armies in France was 7,717 in August 1918, and a few were also employed with the American Expeditionary Force.

Members of the Women's Army Auxiliary Corps first came to France early in 1917, and until a special medical service had been organized for them under Dr. L. Sandeman the sick amongst them were treated by officers of the R.A.M.C. in special women's wards of general and stationary hospitals. Thus in July 1917 the following hospital accommodation had been provided for women workers :—

Locality.	Hospital.	No. of beds.
Wimereux ..	No. 14 General	24
,, ..	No. 14 Stationary	20*
Rouen	No. 8 General	50
Havre	No. 2 General	24*
Etaples	Villa des Puits	30
Le Treport ..	No. 3 General	10
Abbeville.. ..	No. 2 Stationary	40
St. Omer.. ..	No. 7 General	6*
,, ...	No. 10 Stationary	10
Marseilles ..	Marseilles Stationary	5

Those marked with an asterisk were for infectious cases.

There was thus a total of 219 hospital beds for women workers, and additional accommodation was being considered at Rouen, for infectious cases, and at Etaples and Calais. There were also convalescent homes for 50 in the Havre area, and additional homes for 50 in Boulogne and for 80 at Etaples were being considered.

On Dr. Sandeman's arrival in France the medical services were provided by medical women under the medical organization for their employment published in an Army Council Instruction of November 1917. The organization provided for a chief medical controller at the headquarters of the L. of C., with an assistant medical controller at Boulogne for northern areas and at Rouen for southern areas. Under them lady doctors were employed at Boulogne, Calais and St. Omer, Etaples, Rouen and Dieppe, Havre and Etretat, and Abbeville.

It had been estimated that 6 per cent of the strength would be constantly off duty on account of sickness, 2 per cent. for illness requiring hospital treatment, 2 per cent. for minor ailments for which it would be unnecessary to transfer them from their units, and 2 per cent. for no definite illness but in need of rest. The hospital accommodation already provided was sufficient for the serious cases and steps were taken to increase the accommodation in convalescent homes for those in need of rest. For the patients suffering from minor ailments sick bays or detention wards were prepared. For this purpose a room or hut was fitted with accommodation for 2 per cent. of the strength in all isolated units and in units of over 100 members, extra furnishings being provided by the British Red Cross Society to make the wards comfortable and attractive. Patients were only to remain in a sick bay for forty-eight hours, and, if further treatment was then necessary, they were transferred to the hospitals. The larger sick bays included a small isolation ward, a ward kitchen and a bedroom for the V.A.D. nurse in charge. In smaller units of less than 100 a hostel forewoman with knowledge of nursing, or a nursing orderly of the R.A.M.C., was included in the strength.

In addition to the women workers of the Q.M.A.A.C., parties of the Women's Royal Air Force were sent to France after the armistice and Dr. Lily Baker was attached to the headquarters of the Royal Air Force as medical officer in charge of them. The daily sick were seen by medical officers attached to the R.A.F. and those needing hospital treatment were sent to women's wards in No. 24 General and No. 46 Stationary Hospital, Etaples, No. 14 Stationary Hospital, Wimereux, and No. 4 Stationary Hospital, St. Omer. In other respects the services were similar, in their organization, to those of the Q.M.A.A.C.

CHAPTER VIII.

THE PERIOD OF CONCENTRATION.

THE Expeditionary Force which had mobilized in England on the declaration of war commenced its movement to France on the 9th August 1914, leaving the 4th and 6th Divisions to join it at a subsequent period of the campaign. The headquarters of the L. of C., together with certain L. of C. units for railway, supply, and signal services, and the headquarters of administrative services and departments embarked on that date ; but, with the exception of advanced parties, and L. of C. battalions, the field army, consisting of the Cavalry Division and 5th Cavalry Brigade, the 1st and 2nd Divisions and Ist Corps Headquarters, 3rd and 5th Divisions and IInd Corps Headquarters, did not begin to embark before the 14th August. Its concentration was virtually completed by the 20th of the month ; and on the following day the period of concentration, so far as the field army was concerned, ended.

The bases at which the troops disembarked were Havre, Boulogne and Rouen. Havre was the principal base, with Rouen as a subsidiary base. Boulogne was intended to be used only during the period of concentration. An advanced base, between the sea bases and the concentration area, was established at Amiens. The concentration area was along the River Sambre from Maubeuge to the neighbourhood of Wassigny. The Cavalry Division and 5th Cavalry Brigade concentrated at Jeumont, Damousies, Cousolre, Wattignies and Hautmont, in an area east of Maubeuge, with its headquarters at Maubeuge and afterwards, on the 20th August, at Aibes. The IInd Corps concentration area was south-west of the Cavalry, with its 3rd Division at Noyelles, Taisnières, Marbaix and Dompierre, its 5th Division at Maroilles, Landrecies and Ors, and its headquarters at Landrecies. The Ist Corps was still further south ; its 1st Division concentrating at Boué, Esquehéries and Lascelles, and its 2nd Division at Meunevret, Grougis and Hanappes. Its headquarters were at Wassigny

Instructions for the Inspector-General of Communications, which were issued on mobilization, contained many points of importance for the guidance of the directors of the administrative services, including the Director of Medical Services

They had a special influence on the preparation of the medical service prior to the operations of the field army against the enemy. They explain the situation in which Surg.-General Woodhouse, the D.M.S., found himself placed and the problems which he and his staff had to consider on their arrival in France.

Before entraining for their concentration area the various units were to assemble in rest camps at the bases where they disembarked. The French authorities were responsible for making all arrangements for their reception, and for providing sites for the camps as well as the buildings required for depôts and billets. At Havre eleven rest camps, on high ground above the town and some miles from the quays, had been selected, sufficient to accommodate 29,000 men; at Rouen the rest camps, also some three or four miles from the quays, were intended for 8,000, and at Boulogne for 10,000. Tents and camp equipment were sent over from England in advance, and were to be pitched by the L. of C. battalions which arrived first. The arrangements for disembarkation were to be made by the naval and military transport officers at the ports. The sanitary arrangements on the quays were to be supervised by the latter, and the necessary equipment was to be sent from England for the purpose.

The transport of the troops by rail was to be worked and controlled entirely by the French authorities, the capacity of the railways being limited to 20 trains daily from Boulogne, and 40 from Havre and Rouen combined. Rouen alone was limited to 15 trains daily and although all of the 40 trains could be run from Havre, the number actually allowed from there depended on the number despatched from Rouen. The system was controlled by a French *Commission de ligne*, at Amiens. Amiens was the *gare régulatrice* of the system; that is to say all trains from or to the bases passed through Amiens and were directed from there to their destinations. A General Staff Officer from the staff of the I.G.C. was the sole liaison officer between the British and the *Commission de ligne*, which consisted of a French military officer (*Commissaire militaire*) and a railway engineer (*Commissaire technique*) with their assistants. Entraining of troops at the bases and detraining at the concentration area were carried out by authorities subordinate to the *Commission de ligne*. The railway entraining authorities at the bases were *délégués à embarquement*, whose liaison with the British was the Base Commandant. Detraining arrangements were made at a

gare régulatrice de débarquement, a junction through which all trains proceeding to the concentration area had to pass, and from which they were directed to the detraining stations by a *Commission régulatrice de débarquement*. The A.Q.M.G. on the General Headquarters Staff represented the British on this *Commission*. He was responsible for arranging the billeting areas in the concentration area and the routes of march to them from the detraining stations. The *Commission régulatrice de débarquement* was responsible for selecting detraining stations as far as possible in proximity to the billeting areas of the different formations. But in all cases railway interests were paramount. The actual work at railway stations was carried out by *Commissaires de gare*, the equivalent of our station-masters or station superintendents; and with them were associated the British railway transport officers.

The British authorities themselves had thus nothing to do with the working of the railways, and their duties were confined to stating the number of troops available from time to time for entraining, and to acting as intermediaries at the entraining and detraining points.

With regard to the effect of this system of railway transport on medical arrangements, the instructions for the Inspector-General of Communications emphasized the fact that one of the factors affecting medical problems was the necessity of economizing rail transport during concentration; and with the exception of certain units which were to open immediately on arrival, the medical units were to remain parked at the bases pending instructions from the D.M.S.

The instructions also indicated the system to be adopted for the evacuation of sick during the period of concentration. Before the arrival of the field ambulances and supply columns they were to be taken to railheads in the general service wagons of the divisional "train," and subsequently by the ambulance wagons of the field ambulances and the motor lorries of the supply columns, some of which were to be specially fitted for ambulance transport. On arrival at railhead they were to be taken to the advanced base in the railway train which brought up supplies, and for this purpose one or more wagons specially fitted with apparatus and stretchers, supplied by the British authorities, were to be attached to each supply train at the advanced base. Sick likely to be fit to rejoin their units in a short time or unfit for further transport were to be kept at the advanced base; others were to continue the journey to Rouen or Havre. During field operations this

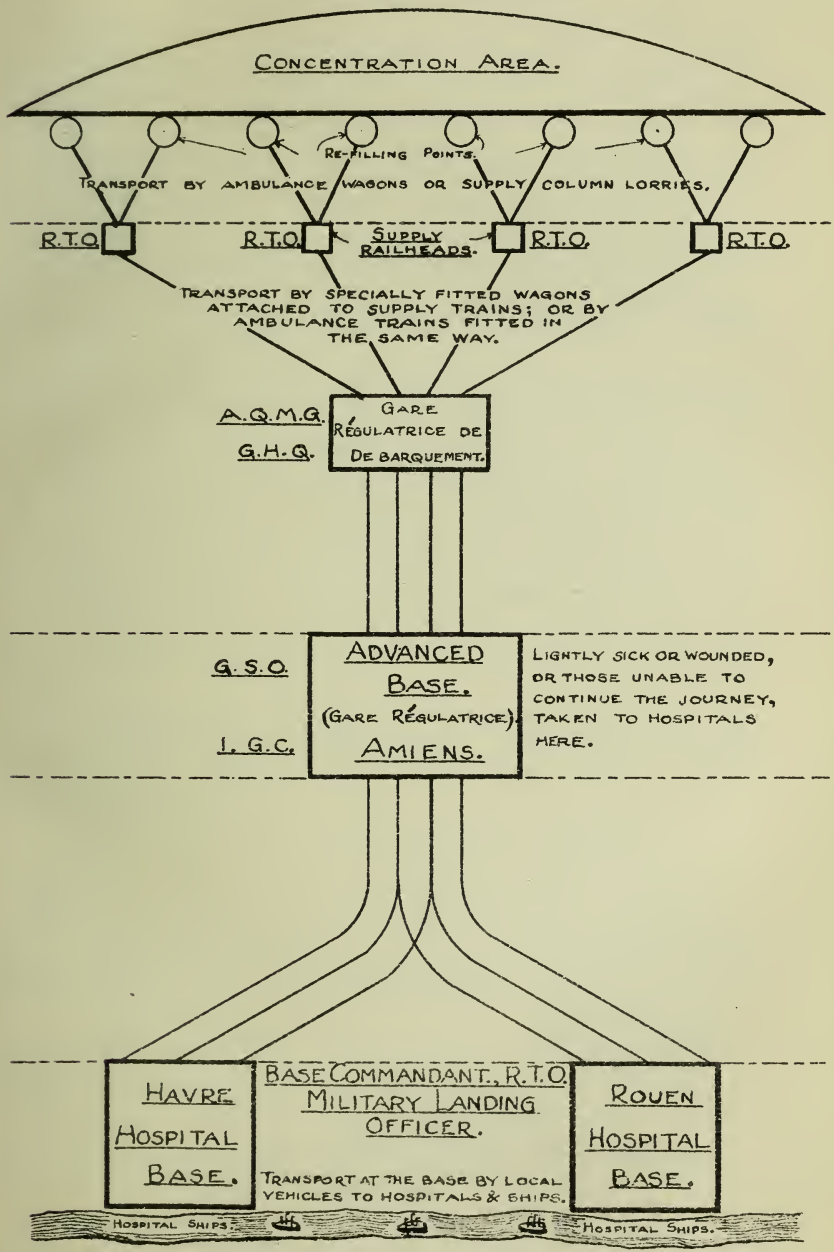
system was to be continued for the evacuation of sick, and the six ambulance trains were to be reserved for the transport of the wounded. The ambulance trains were to be assembled at Amiens, and organized from covered goods wagons supplied by the French but equipped with Brechôt-Desprez-Ameline frames, stretchers and other ordnance equipment supplied by the British. They were to be ready by the 24th August at latest; and were to be directed to evacuation railheads (*gares d'évacuation*) on the demand of the I.G.C. by the *Commission de ligne*, designated a *Commission régulatrice* after concentration had been completed. Slightly wounded or those unfit for further transport would be taken off at the *gare régulatrice*, as in the case of the sick, and the others sent to the base. It will be remembered, however, that the equipment for the six ambulance trains was deficient on mobilization, especially in stretchers, and this fact was emphasized in the instructions to the Director of Ordnance, who was informed that certain deficiencies in stores might have to be made good at the beginning of the campaign, amongst others being the arrangements for fitting up ambulance trains, the provision of ambulance fittings for lorries, and the making up of the deficiency in stretchers. The instructions specially emphasized the urgency of these matters.

In connexion with these arrangements for the evacuation of wounded, the instructions directed that clearing and stationary hospitals should be sent up as required near the army by arrangement between the I.G.C. and the *Commission régulatrice*, in order to clear the field ambulances and take charge of such wounded as could not be moved. Further, a note on the necessity of organizing transport during the concentration period for immediate requirements at the bases and for movement of hospitals in the neighbourhood of the field army was included in the instructions to the Director of Transport.

With regard to the location of hospital units, the area between the advanced base and the field army was to be kept as clear as possible. There was reluctance on the part of the French to agree to the British hospitals being distributed over an area which was filled with their own troops and hospitals. The area outside which British hospitals could not go had, therefore, to be settled in consultation with the French authorities. Places, however, would have to be selected on the railway system serving the British Army, but these would be determined by the plan of operations

System of Evacuation of Sick and Wounded, during Concentration Period and at Commencement of Operations.

August 1914.



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and the railway facilities available. In any case, general hospitals were not to be established beyond the advanced base without the express permission of G.H.Q.

As regards the movement of the field medical units, the instructions provided for only one of the field ambulances of each division embarking on the 15th or 16th August. The others were to follow at a later date.

Finally, the D.M.S. and his staff were to be posted to the advanced base, the Headquarters of the I.G.C., and the D.D.M.S. and his headquarters to Havre. This arrangement, it was stated in the instructions, would be the best during the commencement of concentration, but during this period the eventual medical situation would have to be considered and decided, as the arrangement might not be found suitable for dealing with battle casualties.

Surg.-General Woodhouse and his staff, together with Colonel O'Keeffe, the D.D.M.S., his staff and the A.Ds.M.S. of the three bases and the advanced base embarked at Southampton for France on the 9th August ; and with the exception of Colonel Lynden-Bell, the A.D.M.S. of Boulogne, and Colonel Westcott, the A.D.M.S. of Rouen, who proceeded to their respective bases, disembarked at Havre on the following day. The D.M.S. opened a camp office at Havre until the 13th August, when it was moved to Amiens. Colonel O'Keeffe's office remained at Havre, but moved to Amiens on the 18th August.

The medical units, including the field ambulances, did not begin to arrive till the 14th August. The order of arrival of those units which disembarked during August is shown in the following table :—

Order of disembarkation of Medical Units in August 1914.

Date.	HAVRE.	ROUEN.	BOULOGNE.
14th Aug...	No. 1 Sanitary Section. Nos. 1 to 11 San. Squads.		No. 2 Sanitary Section. No. 2 Stationary Hospital.
15th Aug...	No. 9 Stationary Hospital. No. 10 ,, ,, No. 2 General Hospital. Convalescent Depot.	No. 3 General Hospital.	No. 5 Stationary Hospital. No. 7 ,, ,, No. 7 General Hospital. Six Ambulance Trains.
16th Aug...	No. 1 Cav. Field Amb.		No. 4 Field Ambulance.
17th Aug...	No. 3 Cav. Field Amb.	No. 7 Field Ambulance. Nos. 1, 2 & 3 Advanced Depôts Medical Stores.	
18th Aug...	No. 13 Field Ambulance. No. 6 General Hospital.	No. 5 Cav. Field Amb. Nos. 1 & 3 Clearing Hospitals.	No. 1 Field Ambulance.

Order of disembarkation of Medical Units in August 1914.—cont.

Date.	HAVRE.	ROUEN.	BOULOGNE.
19th Aug. . .		No. 2 Cav. Field Amb. No. 4 ,, ,, ,, Nos. 2, 4, 5 & 6 Clearing Hospitals. No. 5 General Hospital.	No. 2 Field Ambulance. No. 3 ,, ,, No. 5 ,, ,,
20th Aug. . .	No. 14 Field Ambulance. No. 15 ,, ,, No. 1 Stationary Hospital. No. 3 ,, ,, No. 1 General Hospital.	No. 6 Field Ambulance. No. 8 ,, ,, No. 9 ,, ,,	
21st Aug. . .	No. 8 General Hospital. No. 9 ,, ,,	No. 19 Field Ambulance. No. 20 ,, ,,	
22nd Aug. . .	No. 10 General Hospital. Nos. 1, 2 & 3 Base Depôts Medical Stores.		
23rd Aug. . .		No. 10 Field Ambulance.	
24th Aug. . .		No. 11 General Hospital. No. 12 ,, ,,	
25th Aug. . .		No. 4 General Hospital.	No. 11 Field Ambulance. No. 12 ,, ,,
26th Aug. . .			
27th Aug. . .	No. 4 Stationary Hospital. No. 8 ,, ,, No. 11 ,, ,, No. 12 ,, ,,		
28th Aug. . .	No. 6 Stationary Hospital.		

On the 24th August No. 1, No. 2 and No. 3 Hospital Ships arrived at Havre.

It will thus be seen that the sanitary sections and squads were the first to arrive; that all the field ambulances of the formations in the area of concentration, although they had not yet joined their divisions, had disembarked by the time concentration was completed, and that the six ambulance trains, the clearing hospitals, and the advanced depôts of medical stores had also reached France; but that the base depôts of medical stores, eight of the general hospitals and six of the stationary hospitals arrived on dates between the period of concentration and the end of the month.

The units which were under instructions to open immediately on arrival were:—

At Havre . .	. . No. 1 Sanitary Section and the Sanitary Squads. No. 2 General Hospital. The Base Depôts of Medical Stores.
At Rouen . .	. . No. 3 General Hospital.
At Boulogne	. . No. 2 Sanitary Section. No. 2 Stationary Hospital.
At Amiens . .	. . No. 7 General Hospital, and two of the Sanitary Squads.

The advanced depôts of medical stores, Nos. 5 and 7 Stationary Hospitals, the clearing hospitals, and the ambulance train units were also under instructions to proceed to Amiens on disembarkation and await orders there.

This distribution of medical units had already been settled in the instructions issued on mobilization, but were modified in certain respects after the arrival of the D.M.S. in France.

During the concentration period the work of the D.M.S. was mainly directed towards obtaining suitable sites for hospitals on the lines of communication, arranging for the distribution of those units not under instructions to open on arrival, and organizing the means for the evacuation of sick and wounded.

A reconnaisance of suitable localities for hospitals was made at Havre, Rouen and Amiens. A school at Sanvic near some of the rest camps was first selected for No. 2 General Hospital at Havre, but this hospital was subsequently opened in several buildings ; a large building at the embarking stage for hospital ships, the *Gare d'Escalade*, where ambulance trains could be run alongside, becoming eventually its headquarters. The site near the rest camps at Sanvic was then allotted to the convalescent depôt, and another site at Montvilliers near the more distant rest camps for No. 9 Stationary Hospital. At Rouen, a school, the *Repos de Midinette*, was taken over for No. 3 General Hospital, and the *Jardin des Plantes* selected for the establishment of a convalescent depôt. It was also decided to make Rouen the chief hospital centre. Unoccupied camping grounds at Quevelly and on the racecourse, large enough for four or five general hospitals, were selected for this purpose. It was also proposed to establish an officers' hospital of 100 beds in the *Grand Seminaire* of the Little Sisters of the Poor in the Rue du Champ des Oiseaux, some of the Sisters remaining there to assist in its management. Orders were then issued for Nos. 4, 5, 11 and 12 General Hospitals to proceed to Rouen, on their arrival in France, and open there. Miss McCarthy, the Principal Matron, who arrived at Surg.-General Woodhouse's headquarters in Amiens on the 15th August, was consequently instructed to establish her headquarters at Rouen on the 19th August in order to assist the A.D.M.S. in arranging nursing duties in this important hospital centre. Nos. 1, 6, 8, 9, and 10 General Hospitals, due to disembark at Havre, were still unplaced, and on the 21st August Surg.-General Woodhouse arranged, on their arrival, for No. 1 to open at Havre, for Nos. 6, 8 and 9 to go to Rouen, and No. 10 to Amiens.

The distribution of the stationary hospitals appears to have been influenced by the rôle assigned to them in the instructions for the I.G.C., for on the 19th August the D.D.M.S., L. of C., proposed to cut down the equipment of all except No. 2 and No. 9, which were being opened at Boulogne and Havre, and bring them to Amiens with a view to using them as reserve field medical units. Railway transport was not, however, available to bring them up then, but on the 21st August Colonel O'Keeffe, the D.D.M.S., L. of C., appears to have come to some arrangement with the A.Q.M.G. for the transfer of Nos. 1, 3, 4, 6, 8, 10, 11 and 12 Stationary Hospitals to Amiens on their arrival in France. An excellent site had been selected at Longeau, some three or four miles outside Amiens on the Peronne road, for No. 10 General Hospital and a convalescent camp, and it was intended to store the heavy equipment of the stationary hospitals with No. 10 General Hospital there. Following on these arrangements Nos. 1, 3 and 10 Stationary Hospitals, which had already disembarked, arrived at Amiens on the 23rd August, but as they were in advance of No. 10 General Hospital, their heavy equipment was sent back to Rouen.

The policy for the employment of the stationary hospitals thus appears to have been at variance with the principles laid down in Field Service Regulations and the Manual of R.A.M.C. Training. These units were intended for use as local hospitals at posts on the lines of communication not provided with general hospitals, or as hospitals for special purposes, such as isolation hospitals. Some light is thrown on this change of policy, however, from the notes of a conference in the Q.M.G's. room at the War Office, before the Expeditionary Force embarked, between the Q.M.G , A.G., D. of T., D. of S., and D.M.S. regarding the evacuation of wounded. It would appear that at this conference the immediate removal of wounded from the battlefield was not considered feasible or advisable, and that the clearing hospitals, supplemented by personnel from all medical units on the lines of communication, would have to attend to wounded in villages and houses possibly over a large area ; and that the wounded would be cared for then by the R.A.M.C. personnel until such time as they were fit to be moved and transport was available. The D.M.S. had emphatically given it as his opinion that, whatever theory might be held to the contrary, the removal of the wounded to railhead would necessarily occupy many days.

One can understand, therefore, Surg.-General Woodhouse's

anxiety to bring all the stationary hospitals, not opened at the bases, up to Amiens; and the orders which were issued to Nos. 1, 3 and 10 after their arrival there. These three hospitals were instructed to send away all their heavy equipment and divide into two sections, each ready to act independently as a "reserve field hospital" to supplement a field ambulance.

Action of this kind was apparently prompted by a fear lest the regulated system of evacuation of field ambulances through clearing hospitals would break down in the event of battle casualties occurring in vast numbers. This fear was not, however, justified; and, as will be seen later, the stationary hospitals were never used at any subsequent period of the war in the manner proposed.

No. 5 and No. 7 Stationary Hospitals, which were already in Amiens, were ordered to proceed to Busigny, near the concentration area, on the 18th August; but they were sent on to Cambrai the following day, where their personnel was to be employed in providing medical orderlies to accompany the supply columns used in evacuating sick to railhead. This would normally have been a clearing hospital duty; but, as will be seen from the preceding table, the clearing hospitals had only just disembarked at Rouen, and these two stationary hospitals were to be employed temporarily in clearing hospital duties. Three days later, however, when the clearing hospitals had arrived, Nos. 5 and 7 Stationary Hospitals were sent to St. Quentin and employed in forming railway rest stations there.

The clearing hospitals, with the exception of No. 3, which was delayed at Rouen till 23rd August and did not reach St. Quentin till the 24th, were sent to St. Quentin immediately on disembarkation. They did not halt at the advanced base on their way, but were expected to pass through Amiens on the 21st August. It was at this time that the suggestion was made to obtain some of the clearing hospital stretchers for the ambulance trains to make good the deficiency of stretchers in the latter.* Colonel O'Keeffe proposed on the 20th August to obtain them when the clearing hospitals passed through Amiens. The railway authorities, however, did not permit this; and the only step which could be taken then was to instruct the clearing hospitals to supply stretchers to the ambulance trains, should they be required, at St. Quentin.

* See Vol. I, Medical Services General History, Chapter III, p. 46.

Six ambulance train units arrived in Amiens on the 17th August, when the A.D.M.S. of the advanced base—Lieut.-Colonel Barefoot—was instructed to undertake their organization. An ambulance train depôt was formed at St. Roch station, a large junction a mile outside Amiens, and there, on the afternoon of the 17th August, a hundred covered goods vans, with a few passenger coaches and luggage vans, were handed over to the personnel of the ambulance trains. The rolling stock was divided into three sets to form the first three trains. The vans were scrubbed, disinfected and thoroughly cleaned, and what had been dingy vehicles a few days before took the form of clean well-equipped dispensaries, surgical dressing rooms, stores for equipment, food, reserve stretchers and blankets, and kitchens with ovens and stoves capable of cooking for 700 patients. Fresh-water barrels, disinfecting apparatus, filters and ice chests were added. The ward coaches were equipped with Brechôt-Desprez-Ameline stretcher frames, of which a large number had been brought over from England. Four frames carrying three stretchers each were fitted into each van, but the number of stretchers available was 100 less than the total required for two of the trains, a fact which explained the action taken by Colonel O'Keeffe to endeavour to obtain stretchers from the clearing hospitals when they passed through Amiens on the 21st August.

There was also a great deficiency in various other ordnance stores, such as pails, jugs, basins, camp stores and blankets, and as the existing situation prevented these being obtained at once from ordnance stores in Amiens, authority was given for the purchase locally of whatever was required. In this way Nos. 1 and 2 Ambulance Trains were got ready to move to railheads by the 22nd, and No. 3 by the 25th August. In the meantime, the Officer Commanding No. 3 Ambulance Train had been authorized to proceed to Paris with orders to bring back articles of equipment which could not be purchased in Amiens; while some of the personnel of No. 6 train was distributed to the vehicles of the supply trains allotted for the evacuation of the sick. Three orderlies with Brechôt frames and medical and surgical equipment were in this way allotted to each of these trains. When the supplies had been unloaded their duty was to scour and disinfect some of the vehicles and fit them with the Brechôt apparatus, each supply train on the return journey being thus organized to carry 36 patients lying down and 79 sitting up. Before, however, No. 4 and No. 5 trains could be got ready and the personnel

of No. 6 reassembled, concentration had ended ; the operations leading to abandoning Amiens as the advanced base had commenced, and the ambulance train depôt, with other medical units at Amiens, had to be transferred to Rouen.

Previous to the arrival of the two sanitary sections and eleven sanitary squads at Havre and Rouen on the 14th August the lack of technical sanitary organization in the rest camps and billets had resulted in conditions of sanitation which created no small degree of alarm in the minds of the administrative medical officers. The following extract from a report of the work of No. 1 Sanitary Section gives some picture of the state in which sanitation was found on its arrival at Havre :— " The docks were in a filthy condition. Piles of refuse and excreta, swarming with flies, were situated every few yards," and, as regards the camps, " promiscuous defaecating and urinating was taking place everywhere." Town sanitation in France was notoriously below the standard of sanitation in British municipal areas, and enteric fever was more or less endemic. Great activity was consequently displayed both on the lines of communication and in the concentration area in inoculating the troops against enteric fever ; while the sanitary sections laboured energetically in improving the sanitary conditions of the billets and rest camps at the bases. Four of the sanitary squads were at once formed into a sanitary section to work at Rouen under the Sanitary Officer of that base. The War Establishments allotted two sanitary squads to the advanced base ; but the sanitation of Amiens was, if anything, more unsatisfactory than at the other bases, and enteric fever was known to be endemic there. Four sanitary squads were consequently detailed for duty as a sanitary section at Amiens, thus leaving three only for railheads. In the meantime the condition of railheads was becoming worse from day to day, and Major Webb, who commanded No. 1 Sanitary Section, was instructed on the 18th August to hand over his command to the base sanitary officer at Havre and undertake new duties as a sanitary officer and D.A.D.M.S. of Railheads, an appointment created to meet the emergency which had arisen at this early period of the campaign. By these measures sanitation was got well in hand, at any rate so far as the lines of communication were concerned, before the field army commenced its operations against the enemy.

The three advanced depôts of medical stores on disembarking at Rouen on the 17th August were entrained for Amiens and

arrived there on the 21st August, when No. 1 was opened. The base depôts arrived at Havre on the 22nd August, when No. 1 was sent on to Rouen to open there.

The three hospital ships crossed to Havre on the 24th August, as already noted. No. 2 and No. 3 continued the voyage up the Seine to Rouen.

Convalescent depôts or camps were in process of being opened at Boulogne, Havre and Rouen during this period.

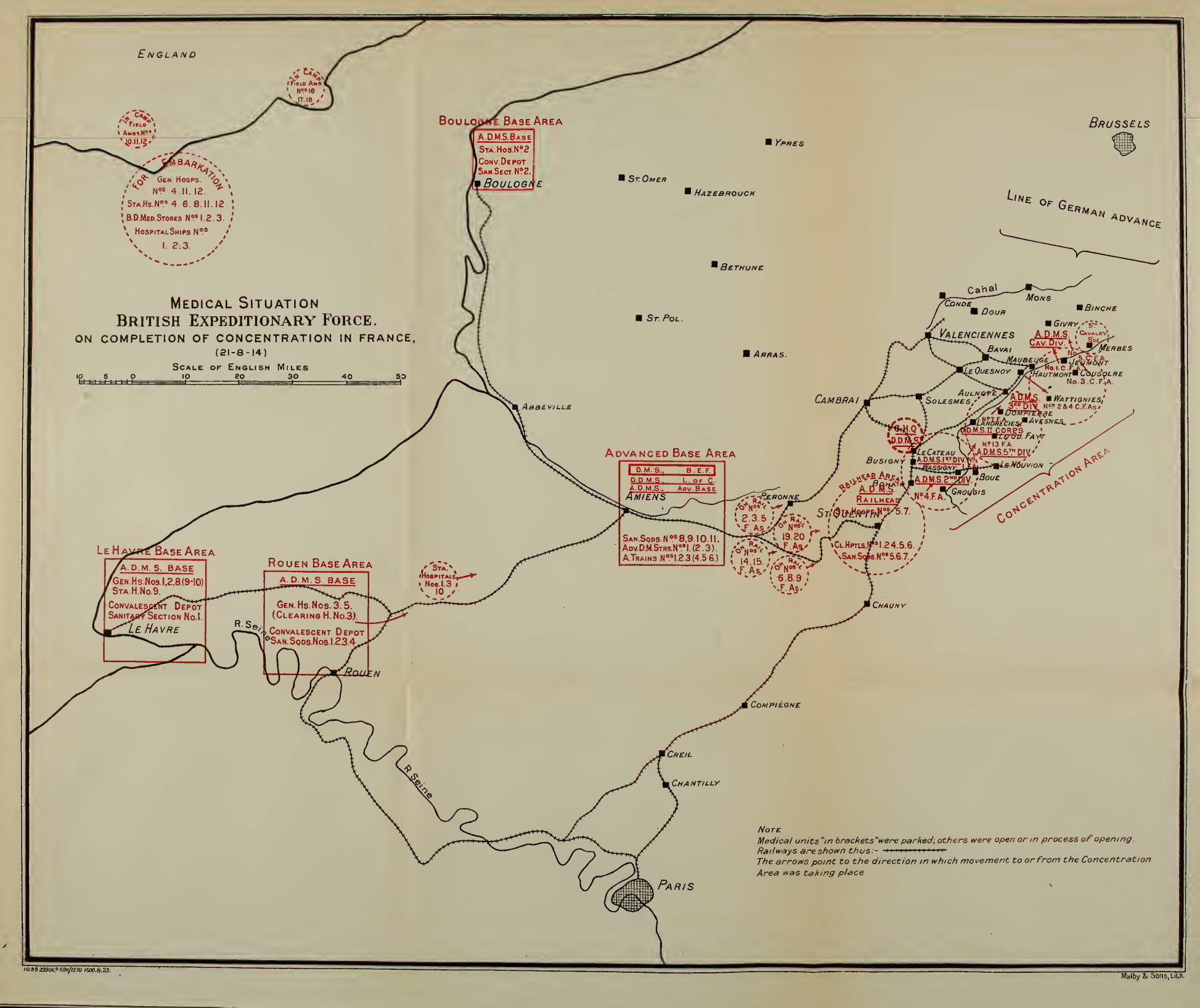
The situation, therefore, on the lines of communication by the 21st August, when the Expeditionary Force had completed its concentration on the Sambre, may be summarized as follows :—

At Havre No. 2 General, No. 9 Stationary Hospital, and a convalescent depôt were being opened. Sanitary work was being actively carried on by No. 1 Sanitary Section. All other medical units arriving at Havre, except No. 1 General Hospital, Nos. 2 and 3 Base Depôts of Medical Stores and No. 1 Hospital Ship, were detailed for other localities ; but No. 8 General Hospital, under orders for Rouen, No. 10 for Amiens, and all the stationary hospitals, except Nos. 1, 3 and 10, did not leave Havre before their intended distribution was radically disturbed by the events of the last week of August.

The remaining general hospitals, with the exception of No. 7 at Amiens, were under orders to form a hospital centre at Rouen ; and No. 3 was being opened there. A convalescent depôt was also being opened. Four sanitary squads were at work ; and No. 1 Base Depôt of Medical Stores, and Nos. 2 and 3 Hospital Ships were under orders for this base.

At Boulogne No. 2 Stationary Hospital was being opened and No. 2 Sanitary Section was at work. A convalescent depôt was also being established.

At Amiens No. 7 General Hospital was opening. Nos. 5 and 7 Stationary Hospitals had arrived and had been sent to the vicinity of the concentration area, but were subsequently withdrawn to St. Quentin to form rest station parties there. Nos. 1, 3 and 10 Stationary Hospitals were being brought up. Nos. 4, 6, 8, 11 and 12 had not yet arrived in France, but were under orders to proceed to Amiens whenever railway transport became available for the move. An ambulance train depôt had been formed, and Nos. 1, 2 and 3 Ambulance Trains were being rapidly completed. No. 6 Ambulance Train personnel had been distributed for duty with the supply trains. Equipment was being obtained from Paris for Nos. 4 and 5 Ambulance Trains. One advanced depôt of medical



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stores was being opened and two were held in reserve. Four sanitary squads were at work and three had gone on to railheads, with Major Webb as Sanitary Officer and D.A.D.M.S. The clearing hospitals which had arrived at Rouen were being concentrated at St. Quentin. The headquarters both of the D.M.S. and the D.D.M.S., L. of C., were at Amiens.

Preparations on the lines of communication were thus well advanced during the concentration period. This could not, however, be said of the medical situation with the field army. None of the cavalry field ambulances had reached the concentration area before the 19th August, when No. 1 detrained at Maubeuge and marched to Jeumont. No. 3 arrived at Cousolre the following day, but Nos. 2, 4 and 5 did not join their formations until the 21st August, after the Cavalry had moved forward, Nos. 2 and 4 Cavalry Field Ambulances reaching Wattignies and No. 5 Merbes on that date.

Only one of the field ambulances in each division reached the concentration area before the advance took place, No. 1 arriving at Boué and No. 4 at Grougis on the 19th August, and Nos. 7 and 13 Dompierre and Grand Fayt respectively on the following day.

General Headquarters went straight from Havre to Le Cateau, where it arrived on the 16th August, but the army troops field ambulances, Nos. 19 and 20, did not arrive in France till the 21st August, when No. 20 went to Le Cateau, arriving on the 23rd August. The headquarters section of No. 19 went to Valenciennes on the same day, where it was eventually attached to the 19th Brigade, which had been formed of the four battalions composing the L. of C. defence troops. "B" and "C" sections of No. 19 Field Ambulance went to Landrecies and joined the headquarters of the Ist Corps. The situation is shown in the sketch map.

There was only one medical officer with G.H.Q., Major S. L. Cummins, in medical charge of the G.H.Q. Staff. Owing to the D.M.S. having been instructed on mobilization to establish his headquarters with the I.G.C. there was thus no responsible administrative medical officer attached to the Commander-in-Chief's staff to whom important administrative questions could be referred for immediate decision, with whom questions of the strategical disposition of medical units could be considered, and by whom a link could be formed between the medical services of the field army and the lines of communication. These were essentially functions which belonged to the D.M.S. of the Expeditionary Force. They were of extreme

importance in connexion with the evacuation of the sick and wounded to the hospitals on the lines of communication; while it was on the information available at G.H.Q. and the facilities there for meeting emergencies that the power of the D.M.S. to move the medical units, more especially the clearing hospitals, into positions which would conform strategically with the operations of the field army and the military situation generally to a great extent depended. Fortunately the difficulties experienced in these respects at G.H.Q. were met by a fortuitous circumstance which enabled the D.M.S. to appoint a D.D.M.S. to represent him at G.H.Q., as he himself apparently was not at the time empowered to move his office there from the advanced base. Colonel O'Donnell, who on mobilization had been appointed D.D.M.S. of the Ist Corps, was accepted as such by the Corps Commander, on the understanding that on arrival in France his appointment would lapse, as there was no provision in War Establishments for a corps D.D.M.S. Consequently when he came to France with the corps headquarters he was instructed to report to the D.M.S. at the advanced base, and arrived at Amiens on the 19th August, before the question of the retention of a D.D.M.S. with the Ist Corps could be settled. Surg.-General Woodhouse then proposed that Colonel O'Donnell's services should be utilized as his representative at G.H.Q. This was at once accepted by the A.G., and Colonel O'Donnell joined G.H.Q. at Le Cateau on the 19th August as D.D.M.S. there.

The administrative medical situation was thus somewhat complicated and confused from the very first; for while the IInd Corps had a D.D.M.S. exercising administrative medical supervision over the A.Ds.M.S. of its divisions, the Ist Corps had none. Further, the appointment of a D.D.M.S. at G.H.Q. necessarily led to the general supervision and management of the medical arrangements linking the field army with the lines of communications being absorbed by his office, and it was to him more than to the D.M.S. of the Expeditionary Force that the G.H.Q. Staff were apt to refer questions of medical administration. The D.M.S. was thus left in the anomalous position of being in a lesser degree than his subordinate in touch with the G.H.Q. Staff. An opportunity for friction in the smooth working of the administrative medical services was thus established, as already noted in Chapter I. Although Colonel O'Donnell carried out the duties which were thus thrown upon him with much tact and success, yet a situation arose which divorced the office of the responsible head of the

medical services from G.H.Q. and consorted it with the office of the administrative medical staff of the L. of C., and in a way on the top of the D.D.M.S. of the L. of C. An arrangement of this kind cannot be defended logically, and at the commencement of the campaign might have created an amount of friction and confusion which would have materially interfered with the efficiency of the medical services as a whole.

Apart from this point in administration, several other problems of interest and importance in connexion with medical services were brought to light during the period of concentration. The insanitary condition of camps and billets, which, until the arrival of the sanitary sections and squads, was becoming worse from day to day, brought into prominence the necessity of sending the sanitary sections and squads to organize the sanitation of camps and billets before the arrival of units of any description, instead of some days after the movement into the camps had commenced. It needs no argument to emphasize this. But reliance appears to have been placed on the preliminary arrangements for which the French authorities were responsible, as well as on the training in sanitation which had been a prominent feature in many, if not all, of the infantry battalions of the regular army in time of peace. The probability of the sanitary condition of railheads and railway stations becoming a definite menace to the health of an army was foreseen long ago by the organization of sanitary squads, but the fouling of these places during concentration and, later, after operations had commenced exceeded all anticipations, owing to the passage through them not only of British, but also of French and Belgian troops and refugees. The early employment of sanitary squads at railheads was consequently just as important as the early employment of sanitary sections at the bases.

Another point to which prominence was given was the lack of hospital accommodation for sick at the bases and in the concentration area in the earlier stages of concentration. Cases of sickness occurred in units and their advanced parties before the medical units had arrived or were opened, while battalion medical officers either did not arrive with the advanced parties, or were not on the establishment of the smaller units which arrived first. The only medical officers who had arrived in France at the commencement of the movement were, therefore, the administrative medical staffs of the Expeditionary Force and bases, and for a few days the sick had to be seen by them. As there were no British hospital units for the sick,

arrangements had to be made with the French authorities for their admission into French hospitals, and it is due to the enthusiastic co-operation of the French at the bases that suitable accommodation was found immediately.

In the concentration area, owing to the lack of co-ordination between the medical services in the field army and those on the lines of communication, sick began to find their way to G.H.Q., in the hope that arrangements would be found there for their disposal. Consequently, until No. 20 Field Ambulance arrived at Le Cateau on 23rd August, temporary arrangements had to be made with the local French authorities for their reception. Major S. L. Cummins was able, with the assistance of the Mayor of Le Cateau, to organize two hospitals, one in a convent, where the Lady Superior and nuns rendered valuable help, and the other in a building equipped as an auxiliary hospital by the French Red Cross Society, whose personnel also formed a detachment for a ten-bedded detention ward at the railway station. It has been a recognized principle in the strategical employment of medical services to establish in or near a concentration area one or more stationary hospitals for the reception and treatment of the daily sick, in order to avoid congesting the field medical units and clearing hospitals and using up their material at a time when they should be free to conform with the movement of the army. The move of Nos. 5 and 7 Stationary Hospitals to Busigny and Cambrai, if it had been carried out in advance of concentration, would have amply met those requirements.

The transport of sick from the railway stations to the hospitals at the bases was another of the problems which the D.M.S. and the A.Ds.M.S. of the bases had to consider. The hospitals were being established two or more miles from the detraining stations. It was no doubt anticipated that local vehicles would be requisitioned and adapted for transport of the sick and wounded, but it was soon recognized that only motor transport would be satisfactory if delay was to be avoided. Tramways, lorries, and taxi motor cabs had been considered as suitable vehicles, and at Boulogne six motor lorries were prepared at once for local ambulance transport. At Amiens the D.D.M.S., L. of C., was anxious to have ambulance bodies constructed on the chassis of the local taxi cabs, but did not obtain sanction for this. The need of motor ambulance cars, however, had already suggested itself to him while he was still at Havre, for on the 13th August he asked for twenty motor ambulance cars for local transport at that base as well as others for Boulogne

and Rouen. On the 19th August the I.G.C. consequently telegraphed to the War Office to send ten ambulance cars to Havre and fifty to Rouen. It was this action which initiated the introduction of motor ambulance cars to the British Expeditionary Force in France and brought about the subsequent formation of Motor Ambulance Convoys as essential units of the Royal Army Medical Corps. As has already been noted,* the War Office took immediate action to meet the demand, and ambulance cars commenced to arrive in increasing numbers from the 25th August onwards.

While the number of field ambulances was necessarily restricted to those which were an integral part of the divisions concentrating in France, the general, stationary and clearing hospitals, and in fact all the L. of C. units sent over, were those of the complete Expeditionary Force of six divisions. Consequently at the beginning of the campaign there were more L. of C. hospitals and other medical units than were actually necessary. Further, suitable accommodation for several of the hospital units was lacking, so much so that at one time it was proposed to return some of them to England. Very great difficulty was experienced also in finding billets for the large number of nursing sisters who arrived with the general hospitals. The administrative medical officers felt that it would have been better to have retained them in England until their units had been ready to receive patients. In writing to Sir Arthur Sloggett, the D.G.A.M.S. at the War Office, on the 9th September 1914 Surg.-General Woodhouse emphasized these facts :—

" One point I wish to bring prominently to your notice. We have more unwieldy units at our disposal than we can use. We may send home, to be kept in reserve, three General and four Stationary Hospitals. We have nowhere to park them out here, and the billeting of hundreds of sisters causes a great nuisance."

These facts alone, if there were no other considerations, justified the attitude of the War Office authorities in refusing permission to hospital units and personnel from voluntary sources to proceed to France at a time when so many of the general and stationary hospitals there were in excess of requirements. It was, indeed, many weeks before all of those which arrived in France in August 1914 could be opened. The arrival, therefore, of voluntary units at that time would only have embarrassed and added difficulties to the medical administration.

* Vol. I, Medical Services General History, Chapter III, p. 52.

In France itself there was considerable difficulty in finding suitable outlets for voluntary aid in connexion with the British medical services, and the Chief Commissioner of the British Red Cross Society, who arrived at Boulogne on the 21st and Amiens on the 22nd August, where he met the D.M.S., was only in a position then to assist with grants of money and promises of motor cars. He, however, offered to establish a general hospital at Wimereux, near Boulogne, and the D.M.S. accepted this on the 22nd August, subject to the approval of the Commander-in-Chief. No knowledge of this offer reached the War Office, and, owing to the closing of Boulogne immediately after it was made, the hospital never materialized.

Surg.-General Woodhouse, however, was anxious to establish rest stations at the detraining stations of ambulance trains, and suggested that personnel of V.A.Ds. should be employed in order to avoid using personnel from the hospital units for this purpose. These proposals, also, did not reach the War Office either from him or from the B.R.C.S. at the time.

The amount of sickness amongst the troops during concentration was comparatively small. The weather, however, was hot and oppressive, and several men fainted during the march to the rest camps at Havre. With 200 rounds of ammunition, each man was said to be carrying 72 lb. of kit and equipment; the route to the camps was uphill, and the distance of the farther camps some six miles or more from the disembarking quays.* Reservists, who had joined their units on mobilization and were not yet hardened, were specially affected. Cabs were requisitioned to accompany the troops marching into camp in order to pick up the men who fell out.

In the concentration area there was nothing remarkable in the way of sickness. The health of the troops was good, and in the first batch of sick sent back from the concentration area, fifty-one in number, who arrived at Amiens on the 20th August, there were no serious cases of illness.

* Although Lieut.-Colonel Beveridge, the A.D.M.S. Sanitation, draws special attention to this in his diary, very few cases appear to have been sufficiently serious to require admission to hospital, judging by the records of the hospitals at Havre and other bases.

CHAPTER IX.

THE ADVANCE TO BELGIUM AND BATTLE OF MONS.

THE march northwards from the concentration area into Belgium commenced on the 21st August. On that day the Cavalry Division was approaching the line of the Mons–Condé Canal by way of Givry, and was sending out reconnoitring patrols in the direction of Soignies and Nivelles; while the 5th Cavalry Brigade was pushing on to Binche.

By the evening of the 22nd August the IInd Corps had occupied a line from Villers-Ghislain through St. Symphorien-Oburg-Nimy, and then along the canal to Pommereuil. The Cavalry Division shifted late that evening to the left.

The Ist Corps was on the right of the IInd Corps on the 23rd, facing north-east along the line Givry–Spiennes. The 5th Cavalry Brigade was then forming a screen to its right front in the neighbourhood of Binche.

The 19th Brigade, which detrained at Valenciennes, marched to Condé early on the 23rd, and took a position on the Canal from Condé eastwards, with the 5th Division on its right as far as Mariette, and the 3rd Division from that point through Jemappes along the canal salient north of Mons, and covering the east suburbs of the town. The 2nd Division was on a line south-east of Mons to Harmingies, with the 1st Division on its right as far as Peissant, each with one brigade in the front line.

The country through which the troops marched to these positions and through which they subsequently retreated was partly open, undulating and agricultural country, especially south of the line Valenciennes–Maubeuge, and partly industrial, with a thickly populated coal-mine area north of that line and immediately to the west and south-west of Mons.

The weather was fine and hot on the 21st, showery on the 22nd, and wet on the 23rd. The marches, especially along those portions of the roads which were paved, proved very trying. Reservists constituted a large proportion of the rank and file. Many fell out and had to be brought along in ambulance wagons.

The enemy troops of Von Klück's army were advancing in eight columns against the British front from the direction of Brussels through Ath, Enghien, Soignies and La Louvière;

but only a few cavalry patrol actions took place on the 22nd August, before the Cavalry Division was withdrawn to the flank of the IInd Corps.

The battle of Mons commenced about noon on the 23rd August,* the division most severely engaged being the 3rd Division, especially at the bridge-head of the canal at Jemappes and on the canal salient. It was attacked by three and a half German divisions, and obliged to withdraw from its positions later in the day and occupy a line about three miles south of the canal behind Mons. The 5th Division was also severely attacked by two and a half German divisions at Les Herbières, on the line Ghislain-Pommereuil, and on the withdrawal of the 3rd Division from Jemappes was also brought back by night-fall to a line about three miles south of the canal. The German troops had thus obtained command of the canal crossings. The Ist Corps can scarcely be said to have been engaged except for artillery,† but, owing to the retirement of the French forces on his right, Sir John French was compelled to conform, and ordered a general retreat in the early morning of the 24th August.

The Medical Services during the Advance.

The chief interest in the medical services centres during the advance in the movement of the field ambulances which had not arrived in the concentration area; and, during the battle of the 23rd August, in the disposition and work of Nos. 7, 13 and 4 Field Ambulances.

With the *Cavalry Division* there were Nos. 1, 2, 3 and 4 Cavalry Field Ambulances, and with the *5th Cavalry Brigade*, No. 5. But when the cavalry moved from its concentration area only No. 1 and No. 3 were actually with it. They moved to Givry with the division on the afternoon of the 21st August and remained there till the evening of the 22nd, when they marched to Quievrain, arriving there just after midnight. Major West, in command of No 3, received a considerable number of sick at Givry on the evening of the 21st, and on the 22nd sent forward his light ambulance wagons to collect wounded from an action reported to be taking place at Bray, five miles distant. Nos. 2 and 4 had detrained at Hautmont,

* See Map 1 in pocket in cover of volume.

† The 5th Brigade from the 2nd Division had been sent forward to Frameries to fill a dangerous gap between the 3rd and 5th Divisions during their withdrawal from the canal, but did not come in touch with the enemy, who had failed apparently to seize the opportunity of driving a wedge there between the two divisions.

south of Maubeuge, from Rouen on the afternoon of the 21st August, and were given orders, dated 19th August, to proceed to Wattignies, just south of the concentration area, which the cavalry had already left. They arrived there late the same night, but found no instructions awaiting them. The following morning, Major Langford Lloyd and Major Goodwin, commanding these two ambulances, endeavoured to get in touch with the A.D.M.S. of the Cavalry Division. Lieut. Littlejohn, of the 2nd Cavalry Field Ambulance, found him at Givry, and brought back instructions at 3.30 p.m. for Nos. 2 and 4 to march to Quievrain. They left an hour afterwards, bivouacked for the night at Douzie, continued the march on the 23rd August by Bavai, Bellignies-Audregnies, and reported their arrival at Quievrain to the division at 3.30 p.m. All four ambulances, therefore, of the Cavalry Division were together at Quievrain on the 23rd August, but were not opened for work, and at 8 p.m. of that day were ordered back three miles to Audregnies, where they bivouacked for the night.

No. 5 Cavalry Field Ambulance detrained at Jeumont on the morning of the 21st August, and marched in the afternoon to Merbes Ste. Marie, where it joined the 5th Cavalry Brigade. On the 22nd it moved to Peissant and Rouveroy, its light ambulance wagons being sent forward to Faurœulx, where, it was reported, wounded of the brigade were being collected. A certain number of patients were received and sent to the Belgian Civil Hospital at Givry. The following day the ambulance went to Givry, and on to Havay, where it arrived in the evening and bivouacked.

The 3rd Division and 5th Division had marched into Belgium in advance of the 1st and 2nd Divisions. The field ambulances of the *3rd Division* were Nos. 7, 8 and 9. No. 7 was at Dompierre in the concentration area by 9 p.m. of the 20th August, and was ordered to detail sections to the three brigades of the division until Nos. 8 and 9 had arrived. On the 21st August the division moved to Gognies, and on the 22nd to Noirchain by Quevy and Frameries. Colonel F. W. C. Jones, the A.D.M.S. of the division, found at the latter town a local hospital of forty beds and two schools with fifty beds each, capable of great expansion, as well as a Belgian Red Cross hospital at Paturages adjoining Frameries, just south of the canal. On the morning of the 23rd August he was informed that Nos. 8 and 9 Field Ambulances would arrive at Valenciennes, and he telephoned to the railway transport officer there in the forenoon to direct No. 8 to Hyon, the headquarters of

the 8th Brigade, and No. 9 to Cuesmes, the headquarters of the 9th brigade in relief of the sections of No. 7 Field Ambulance there.

This relief, however, did not take place. No. 8 had detrained at Valenciennes at 1 a.m. and No. 9 at 3 p.m. on the 23rd August from Rouen. No. 8 was directed to proceed to Noirchain, then the headquarters of the 3rd Division, but instead of marching along the direct road from Valenciennes to Mons was diverted down the Bavai road as far as Wargnies, and reached Noirchain late at night after a devious march apparently through the thickly populated districts of Wasmes, Paturages and Frameries ; a long and trying march of some thirty miles, but rendered pleasant by the enthusiastic reception the personnel received from the inhabitants of the villages through which they passed. No. 9 Field Ambulance was also directed to march down the Valenciennes–Bavai road, and halted for the night of the 23rd/24th August at St. Waast-le Vallée, which was reached just after midnight. The 3rd Division headquarters were then being withdrawn to Sars-la-Bruyère, where No. 9 was to report. Neither No. 8 nor No. 9 Field Ambulances was thus available for work with its division during the action of the 23rd August.

The 5*th Divisio*n had No. 13 Field Ambulance in its concentration area at Dompierre by the afternoon of the 20th August. Sick not only of this division, but also of the 3rd Division, were being sent in considerable numbers to Landrecies, where they were being received into the French Military hospital. Consequently when the 5th Division advanced, a detachment of No. 13 Field Ambulance was left there until the sick could be sent away. On the 21st the division moved to Bavai, and the A.D.M.S.—Colonel R. H. S. Sawyer—arranged for the sick to be taken over by the local Belgian Red Cross Society there, and left one medical officer and four orderlies of No. 13 Field Ambulance in charge. The 3rd Division was still evacuating its sick through the 5th Division, and considerable numbers reached Bavai. On the 22nd, No. 13 Field Ambulance arrived at Dour, about four miles south of the canal, and took over the École Industrielle and a Red Cross hospital at the École Communale. Over 200 men had fallen out on the march from Bavai, and were temporarily treated at Dour on the 22nd August. In the meantime, the remaining Field Ambulances of the Division, No. 14 and No. 15, were on their way from Havre to Valenciennes, but did not detrain till late in the afternoon of the 23rd August, when No. 14 marched

to Bavai, arriving at midnight, and No. 15 to Jenlain, arriving at 8 p.m. During the action of the 23rd August, therefore, only No. 13 Field Ambulance was with the 5th Division.

The 1st and 2nd Divisions were more happily situated. Not only were they exempt from any attack by the enemy on the 23rd August, but all their field ambulances had joined them by that date. No. 1 Field Ambulance was at Boué, in the concentration area of the 1*st Division* by the 19th August, and on the main line of railway to Wassigny and Bussigny. Until the division advanced on the 21st August, it thus became a clearing hospital not only for the sick of the 1st Division, but also of the 2nd Division, further south. On the 21st August it marched to Cartignies, a distance of nine miles, north-east from Boué, its "B" Section being detached to march with the right column of the division through Le Nouvion to Avesnes. On the 22nd, No. 1 Field Ambulance continued its march and reached Croix les Rouveroy during the night of the 22nd/23rd, when it was withdrawn in the evening to the neighbourhood of Elesmes, some three miles north-east of Maubeuge. No. 2 and No. 3 Field Ambulances of the division detrained from Boulogne at Aulnoye, nine miles south-west of Maubeuge, on the morning of the 22nd August. No. 2 marched to Remy Mal Bati, and then joined the 2nd Infantry Brigade, advancing in support of the 3rd Cavalry Brigade, which was in action near Bray. It arrived at Villers Sire Nicolle at 1.30 a.m. on the 23rd and remained there. No. 3 marched in the afternoon of the 22nd August to Beaufort, and received orders there to follow behind No. 1, joining the column at Le Pavé, about one mile farther north. It continued the march during the night of 22nd/23rd August to Grand Reng, and sent its bearer division on to Rouveroy. In the evening it was withdrawn to Elesmes with No 1 Field Ambulance. None of these field ambulances were engaged in collecting wounded during the fighting of the 23rd.

The 2*nd Division* moved from its concentration area round Wassigny on the 21st August and advanced to Maroilles, accompanied by No. 4 Field Ambulance, which had been at Grougis in its concentration area since the afternoon of the 19th August. During the march a large number of men fell out suffering from blistered feet and exhaustion, and filled the ambulance wagons. The records of No. 4 Field Ambulance are missing from that date, but it is known to have accompanied the division to Givry, where it was on the 23rd August. No. 5 Field Ambulance of the 2nd Division detrained at Vaux

Andigny, between Wassigny and Bussigny, at 3.45 a.m. on the 22nd August, and at 7.30 a.m. received orders to march to Pont sur Sambre, thirty-two miles distant. It marched through Landrecies and Leval to Aulnoye, where it was billeted for the night of the 22nd/23rd August, and took over sick from No. 4 Field Ambulance. On the 23rd the sick were sent back by rail to St. Quentin, and No. 5 Field Ambulance then followed the field artillery of the division to Bougnies, which was reached in the afternoon. It was employed there in bringing back some wounded from Harveng. No. 6 Field Ambulance of the 2nd Division also detrained at Aulnoye from Rouen during the forenoon of the 22nd and marched to Bonnet. On the following day, leaving a section at Bonnet, it went on to Givry, where it also took over sick from No. 4.

The Medical Services during the Battle.

From this it will be seen that the *Ist Corps* divisions had all their field ambulances with them during the 23rd August, but very little work was thrown on its medical services.

The *IInd Corps* divisions, on the other hand, were hotly engaged, but had only No 7 and No. 13 Field Ambulances with them during the battle.

The work of these two field ambulances during the 23rd August, therefore, merits more detailed notice.

The A.D.M.S. of the *3rd Division* was at Noirchain, and having only one field ambulance at his disposal during the action of the 23rd August, caused No. 7 Field Ambulance to work in its three independent sections. "A" Section opened a dressing station at Ciply, the headquarters of the 7th Brigade, which was in reserve. "B" Section opened at Cuesmes, about two miles from Jemappes and one mile south of the canal, with the 9th Brigade, which was holding the canal from Jemappes to Nimy; while "C" Section opened at Hyon, a village one mile south of the eastern suburb of Mons, with the 8th Brigade, which held the line from Nimy to the east of the town. The A.D.M.S. was then anxious to know what his line of evacuation would be, but was informed that he would be notified later,* and was to make what local arrangements he could. Consequently, when the 8th and 9th Brigades withdrew behind Mons from the line of the canal, and it was found impossible to bring all the wounded back to Ciply, a large number in the area north of Mons were collected into the Belgian hospitals and left in

* Apparently he was not notified.

charge of the Belgian Red Cross Society. Four of the R.A.M.C. officers with battalions,* and also one of the medical officers of "C" Section of No. 7 Field Ambulance, Lieut. Hamilton, were captured. They remained in Mons for a fortnight before being removed to Germany, and during that time found the British wounded well looked after in the hospitals in Mons.

A picture may be formed of the fate of the wounded left behind in Mons from Lieut. Hamilton's notes. He had gone back with two bearers to a château in the Bois la Haut, east of Mons, belonging to M. Bouillart de St. Symphorien, to look after an officer of the Gordon Highlanders, who was reported to be wounded there. He found him with some fifty other wounded at the château, and as it seemed probable that the enemy would arrive at any moment he sent back the bearers and remained himself with the wounded. "When all had been seen and dressed and made as comfortable as possible," he relates, "I made an effort to get away, but on coming round the corner of the house I was seen and fired on by a party of the enemy at close range." During the night he made another effort to get through, but after some hours of wandering in unknown country and running up against Germans at every turn he gave up the attempt and made his way back to the château. "Next morning a German medical officer came in. I had now about 100 wounded, British and German, who had come in during the night, and were divided between M. de St. Symphorien's château and the White Château, which was quite close and belonged to a relative of M. de St. Symphorien. This officer got me to take him round all the cases and very carefully examined all the Germans. He then expressed himself as very pleased with the way I was doing my work and requested me to carry on. I carried on for the next fortnight. During this time I had nothing to complain of in the way I was treated. I was made responsible for rendering a daily return to headquarters of men able to walk. A N.C.O. was sent for these men and marched them off to a hospital where they could be properly guarded. Cases which I reported as requiring operative treatment were sent for and taken to hospital with very little delay. Once or twice medical officers came in and went round the cases. They varied in civility, but none was deliberately offensive. I was allowed

* Major H. W. Long, 2nd Royal Irish. Capt. H. M. T. Perry, 4th Middlesex. Capt. J. H. Graham, 1st Gordon Highlanders. Capt. C. T. Edmunds, 1st Royal Scots Fusiliers.

to move freely about the town and vicinity, and so managed to go round a number of the extemporized hospitals to see our fellows, who were being looked after, on the whole, pretty well, mostly by local Belgian doctors, under the direction of the German Staff. On Saturday, 5th, an order came for me to go down to the station, and I there met several other R.A.M.C. officers—Major Long, Captains Graham, Edmunds and Perry. We had the usual bad time on the journey, which lasted eighty-four hours, and then arrived at the Prisoners of War Camp at Torgau. By the middle of September there were about 800 French and 200 British officers there."

A very different tale is told of the treatment to which sick and wounded prisoners of war were afterwards subjected when they were being transferred to Germany and at later dates; but it would appear that, just at first, the provisions of the Geneva Convention were regarded.

" C " Section of No. 7 Field Ambulance continued collecting wounded until the last of the troops had retired through Hyon. It then withdrew to Ciply with as many wounded as it could carry, and joined " A " Section there at 7 p.m. " B " Section remained at Cuesmes till 3 p.m., when it was ordered to retire on Frameries. Many wounded were collected and left in the Belgian Red Cross hospital there, and the section then went back with a load of wounded to Sars-le-Bruyère, the headquarters of the IInd Corps, where it arrived after midnight of the 23rd/24th.

There are no accurate records of the number of wounded received into No. 7 Field Ambulance on the 23rd. The majority of those collected were sent to the local hospitals in Mons, Frameries and Paturages, in accordance with the instructions given to the A.D.M.S. of the 3rd Division to make local arrangements for their evacuation.

The A.D.M.S. of the *5th Division* had to deal with a similar situation. No. 13 Field Ambulance opened its dressing station at the École des Filles, Dour, where the A.D.M.S. had his headquarters. A small detachment of one officer, three bearer squads, three nursing orderlies and a clerk, with one ambulance wagon, was sent on at 11 a.m. to the railway station at Boussu, and a similar party to Sardon on the Thuilin-Pommereuil road. Up to 1.30 a.m. on the 24th August, four officers and forty-one other ranks, mostly suffering from shrapnel wounds, were admitted to the dressing station at Dour. The detachment at Boussu, under Major McDougall, came back to Dour after midnight of the 23rd/24th with two

wounded officers and seven other ranks, all that the ambulance wagon could carry. Forty-four wounded were left behind in the civil hospital at Boussu, as the unit was obliged to retire on account of shell-fire. Major McDougall had failed to get local transport after making every effort to do so. The detachment at Sardon reported having collected twenty wounded, and apparently left some, if not all, in a civil hospital at Thuilin.

Otherwise, the facilities for evacuation of the sick and wounded from the 5th Division appear to have been greater than in the case of the 3rd Division. On the 22nd, sick were sent to Le Quesnoy and entrained there for Amiens, while sixty-three were sent in a passenger train from Dour to Amiens on the 23rd August. In addition, Colonel Sawyer, hearing during the night of the 23rd/24th that 100 wounded were at St. Ghislain on the canal, and that there was a train there without a locomotive, arranged with the stationmaster at Dour to send a locomotive up and bring them back. The train returned to Dour at 4.45 a.m. on the 24th with two officers and forty other ranks, and one German wounded. Some other wounded were then entrained, and sent on to Amiens with a medical officer and two R.A.M.C. orderlies in charge.

In connexion with the operations of the *2nd Division* on the 23rd August, No. 4 Field Ambulance was ordered to open a dressing station at Givry. The duty was entrusted to "C" Section. A large barn was prepared, and with the assistance of the Mayor and the villagers other buildings sufficient to accommodate 1,000 were obtained. About fifty wounded were said to have been admitted. "A" Section had gone forward and worked with its bearer subdivision collecting wounded from Harmingies, until relieved in the evening by a section of No. 6 Field Ambulance, which had just arrived. It then retired at 8 p.m. to Bonnet Farm, where it was joined by "B" Section, and transferred its wounded to No. 6 Field Ambulance. "B" Section had received no wounded. It apparently went on to the neighbourhood of Hyon, and was subsequently withdrawn through Ciply to Quevy le Petit.

Of the two field ambulances of *Army Troops*, No. 19 and No. 20, the latter joined G.H.Q. at Le Cateau from Rouen during the afternoon of the 22nd August, and opened a receiving station for sick the following morning with one of its sections. No. 19 was split up. Two of its sections, "B" and "C," were sent from Rouen to Landrecies, and "A" Section to Valenciennes. "B" and "C" Sections, under the command of Major Fry, arrived at Landrecies at 5 p.m. on the 22nd

August, but no orders awaited him there. He telephoned to the D.D.M.S. Ist Corps, who, it will be remembered, had been transferred to G.H.Q., so that no orders reached the field ambulance till midday on the 23rd, when Major Fry was instructed to march to Maubeuge and join Ist Corps headquarters. The two sections arrived at Maubeuge at 8.30 p.m. on the 23rd and were billeted there for the night. "A" Section did not reach Valenciennes till 4.30 p.m. of the 23rd August, and, receiving no orders, bivouacked north of the town for the night.

It was evident from this disposition of No. 19 Field Ambulance that Surg.-General Woodhouse had not at that time intended to attach it as a whole to the 19th Infantry Brigade, which was then being formed. In fact, on the 20th August he had arranged to attach two ambulance wagons to each battalion of the brigade in order to supplement the regimental medical equipment and personnel; intending with this arrangement to have the sick transferred to the nearest medical unit or refilling point; and it was not till the 24th August that it was decided to attach No. 19 Field Ambulance to the brigade. Before this decision was made, the intention apparently was to distribute sections as medical units to the headquarters of the Ist and IInd Corps.

Medical Situation after the Battle.

When Sir John French abandoned the offensive on the night of the 23rd/24th and ordered the British to retire, the position was approximately as follows. The 19th Brigade was on the left flank, withdrawn from Condé Canal to Audregnies; the 5th Division on a line from there through Dour to Frameries; the 3rd Division from there to Nouvelles. The 2nd Division was in position on the right flank about Harmingies, and the 1st Division from there to Peissant. The Cavalry Division was behind the left flank, and the 5th Cavalry Brigade on the right flank in the neighbourhood of Havay.

The medical units were then distributed as follows :—

Cavalry Division ..	Nos. 1, 2, 3 & 4 Cavalry Field Ambulances at Audregnies.
5th Cavalry Brigade ..	No. 5 Cavalry Field Ambulance at Havay.
1st Division	No. 1 Field Ambulance at Elesmes.
	Nos. 2 and 3 Field Ambulances at Villers Sire Nicolle.
2nd Division	No. 4 Field Ambulance at Bonnet, with "B" Section at Quevy Le Petit.
	No. 5 Field Ambulance at Bougnies.
	No. 6 Field Ambulance at Bonnet and Givry.

3rd Division	No. 7 Field Ambulance at Ciply with " B " Section at Sars-la-Bruyère.
	No. 8 Field Ambulance at Noirchain.
	No. 9 Field Ambulance at St. Waast-la-Vallée.
5th Division	No. 13 Field Ambulance at Dour.
	No. 14 Field Ambulance at Bavai.
	No. 15 Field Ambulance at Jenlain.
Corps Troops	No. 19 Field Ambulance at Valenciennes with " B " and " C " Sections at Landrecies.
Army Troops ..	No. 20 Field Ambulance at Le Cateau.

Casualties.

No accurate estimate can be formed of the wounded admitted to the field ambulances during the battle of the 23rd August. Existing records show only three wounded as having been received in cavalry field ambulances on the 22nd August, and fourteen on the 23rd, all but four in No. 5 Cavalry Field Ambulance. The records of Nos. 4, 7 and 13 Field Ambulances are unfortunately incomplete and do not cover the period of the battle; so that beyond what has already been described, it is impossible to estimate their work in numbers of wounded. The total casualties in killed, wounded and missing in the IInd Corps, however, were recorded as follows:—

On 23rd August	3rd Division	1,185
	5th Division	386
On 24th August	3rd Division	557
	5th Division	1,656
	Total ..	3,784

Evacuation of the Wounded.

The means of clearing the wounded were scanty. Only a limited number of ambulance wagons were available with the IInd Corps. If all its field ambulances had been present, there would have been sixty ambulance wagons. As it was, there were only twenty, and although the Ist Corps had its full complement, there appears to have been no co-ordinated effort to assist the IInd Corps with field ambulances from the 1st and 2nd Divisions, or from the cavalry. Such assistance does not appear, however, to have been demanded at any time. The confusion of the withdrawal through Mons and the congestion of the roads by refugees and vehicles of all descriptions added to the difficulties of bringing wounded back. In fact, methodical clearing of all the wounded back to railheads would have been difficult though quite possible under the conditions which prevailed. The best that could be done, however, was

to collect them into the local hospitals, and leave them there, when it was no longer possible to bring them back by the available ambulance transport.

Reliance had been placed, in accordance with Field Service Regulations, on the empty lorries of the supply columns, for carrying wounded from the refilling points to railheads, which, on the 23rd August were at Aulnoye for the Cavalry Division and Ist Corps, and at Solesmes for the IInd Corps. The position of the refilling points, however, was not always known by the medical units, or had been moved elsewhere before the ambulance wagons with wounded reached them. The system of evacuation by supply columns thus broke down in some respects on the first occasion when it was put to a practical test.

The organized ambulance trains were not yet running on the railway lines, but the arrangements made for bringing sick and wounded back by empty supply trains, and the use of ordinary passenger trains, together with the action taken by the A.D.M.S. of the 5th Division to secure a train from St. Ghislain, were sufficient for the evacuation by rail to Amiens of all sick and wounded that had been brought to entraining points on the 23rd August and previous days.

CHAPTER X.

THE RETREAT FROM MONS.

THE retreat from Audregnies commenced on the 24th August and was continued till the 5th September. With the exception of one day of rest the troops marched day and night, with short halts, during the whole of this period. The retiring columns were more or less in constant touch with enemy forces, and although the pressure, especially in the latter days of the retreat, was not so great, rearguard actions caused a considerable number of casualties, more especially in the withdrawal from Mons on the 24th and again on the 25th August at Solesmes, and at Landrecies and Maroilles. The IInd Corps with the 4th Division arrived so late at its halting place on the Le Cateau position during the night of the 25th/26th August, and the enemy was so closely in touch with it, that it was found impossible to march off and get clear before daylight. Sir H. Smith-Dorrien, therefore, decided to fight and strike the Germans a blow before continuing his retreat. Subsequently, with the exception of surprise attacks at Néry and actions at Etreux, Crepy en Valois and Villers Cotterets on the 1st September, the retreating troops were practically unmolested.

Outline of Operations from 24th August to 5th September.

The general movement of retreat may thus be regarded from a medical point of view as presenting two phases—the first from the 24th to the 28th August, when the pressure of the enemy's forces was greatest and the effects of the battles at Mons and Le Cateau were strongly felt; and the second, the period from the 28th August to the end of the retreat, when the marches were continued with less pressure and the troops were recovering from the severe strain through which they had passed. During the first of these phases the *Ist Corps* followed a route to the east of the Forest of Mormal by way of Etreux, Guise, Jonqueuse and Mont d'Origny down the valley of the Oise to La Fère, and reached the Forest of St. Gobain on the 28th, where it rested during the 29th August. The *1st and 2nd Divisions* had retreated by separate routes as far as Etreux, the former retiring from Feignies through Hautmont and Le Grand Fayt, and the latter through Bavai, when it turned south-eastwards to Pont-sur-Sambre and then

through Maroilles, Landrecies to Oisy and Etreux. From Etreux onwards the 2nd Division followed the same route as the 1st Division.

The *IInd Corps* retired from the Mons area of battle through Bavai, where the *5th Division*, which had been on the left of the 3rd Division, was transferred to the inner flank of the corps and went on to Le Cateau by the Roman road, the *3rd Division* marching by a westward route through Le Quesnoy, Solesmes and Briastre to the neighbourhood of Caudry and Inchy. The *4th Division* had now arrived in France, and had reached Briastre on the 25th August, when it joined the IInd Corps and fell back with it, covering its retreat on the left of the British line to Haucourt and Esnes. The *19th Brigade* was placed under the IInd Corps Command, and marching by way of Jenlain, Haussy and Solesmes, crossed the line of retreat of the 3rd Division and joined the 5th Division at Le Cateau. The IInd Corps took up a battle position during the night of the 25th/26th August on ground south of the Cambrai–Le Cateau road, with the 4th Division on the extreme left on the high ground north of the Warnelle stream between Esnes and Fontaine-au-Pire, the 3rd Division in the centre at Caudry, Audencourt and Troisvilles, and the 5th Division on the right from Troisvilles eastwards, south of Le Cateau, to the Le Cateau–Landrecies road, with the 19th Brigade in reserve between Bertry and St. Benin.

The battle of Le Cateau was fought during the greater part of the day of the 26th August, but was broken off in the afternoon, the troops retiring in three parallel columns to the neighbourhood of Noyon, which was reached on the 28th August. The 4th Division marched through Vendhuille, Hancourt, Voyennes and Noyon, the 3rd Division through Elincourt, Beaurevoir, Vermand, Ham and Noyon, and the 5th Division with the 19th Brigade through Estrées, St. Quentin and Ollezy. On reaching the Carlepont Forest on the 29th August the divisions of the IInd Corps rested for a few hours before continuing the march.

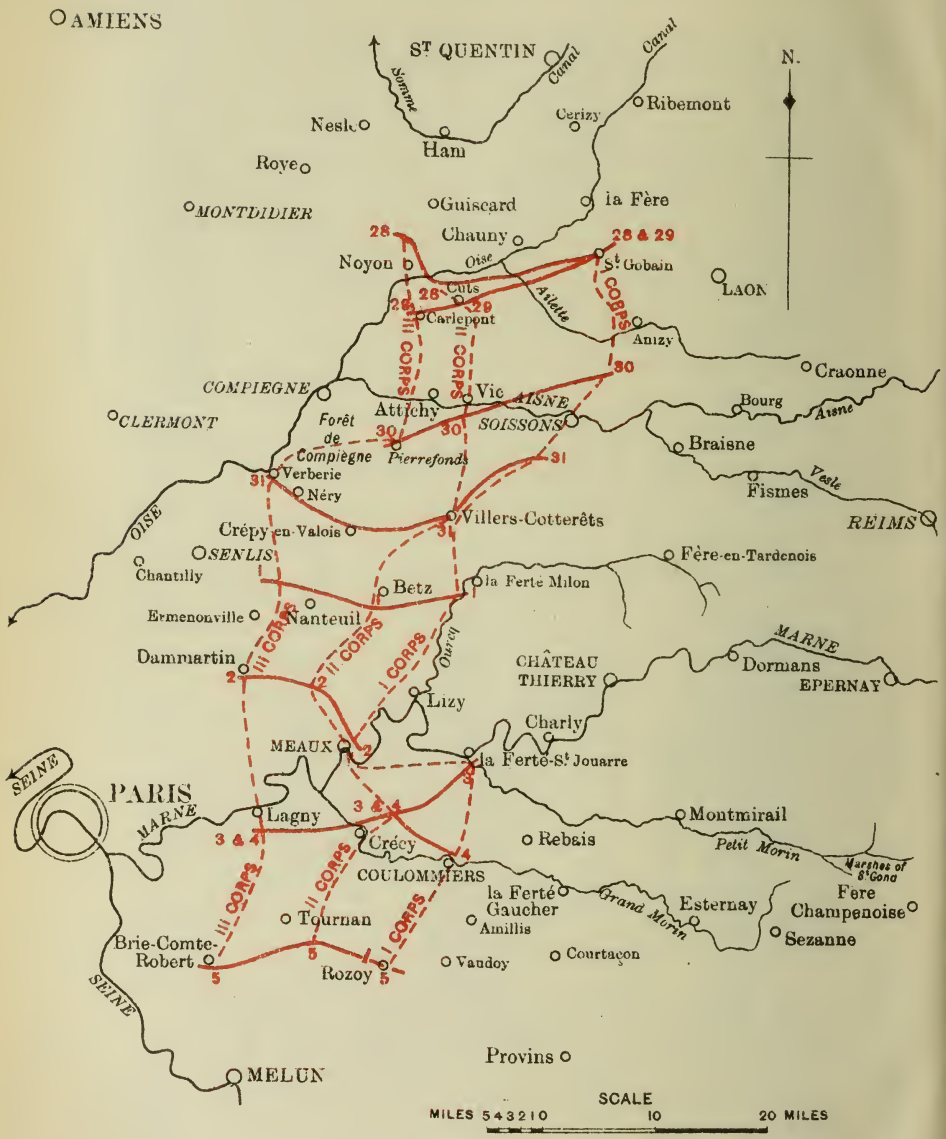
The *Cavalry Division* covered the retreat of the IInd Corps to the Le Cateau positions. During the battle the 3rd and 5th Cavalry Brigades filled the gap between the Ist and IInd Corps east of Le Cateau, while the 1st, 2nd and 4th Cavalry Brigades moved west and covered the left flank. After the battle the 3rd and 5th Cavalry Brigades followed the line of march of the Ist Corps, and the 1st, 2nd and 4th that of the IInd Corps.

Ordnance Survey, 1920.

OPERATIONS, 28 AUGUST - 5 SEPTEMBER, 1914.

Retreat of B.E.F

Positions at night are shown by dates.



Ordnance Survey, 1920.

In the second phase of the retreat, after their much needed rest in the Forest of St. Gobain and around Noyon on the 29th August, the troops continued to march southwards, the IInd Corps crossing the Aisne on the 30th of August, east of Compiègne between Attichy and Fontenoy, and the Ist Corps on the following day west of Soissons.

The *IIIrd Corps* was now formed of the 4th Division and 19th Brigade as a separate command.

After the Aisne had been crossed, the three Corps at first marched south-west in the area between the Ourcq and the Oise towards the eastern defences of Paris. The Ist and IInd Corps then turned eastwards on the 3rd September, and crossed the Ourcq between the Marne and Grand Morin rivers, and then marched south across the latter to the Forest of Crécy, where the retreat ended. The IIIrd Corps, keeping to the west of the Ourcq, crossed the Marne at Lagny on the 3rd September and joined the Ist and IInd Corps south of the Crécy Forest. The cavalry brigades, which had been covering the flanks and filling gaps between the divisions, also halted south of the forest. On the 5th September, therefore, the various formations of the Expeditionary Force were thus brought together south-east of Paris between the Grand Morin and the Seine on the southern fringes of the Forest of Crécy. The 4th Division bivouacked around Ozoir and Brie Comte Robert, the 19th Brigade at Grisy, the 5th Division around Tournan, the 3rd round Chatres, the 2nd at Fontenay and Chaumes, and the 1st round Rozoy, with the 1st, 2nd and 4th Cavalry Brigades further south at Ozouer, Aubepierre and Mormant; and the 3rd and 5th Cavalry Brigades between the 1st and 2nd Divisions at Vilbert and Chaumes.

General Headquarters moved from Le Cateau to St. Quentin on the 25th August, to Noyon on the 26th, to Compiègne on the 28th, to Dammartin on the 31st, to Lagny on the 1st September, and to Melun on the 2nd September, where it remained during the following week.

Weather.

The weather during the retreat was fine and sunny on the 24th August, very wet in the afternoon of the 25th, and again during the 26th August. On the 27th there were thunderstorms. Afterwards the weather became oppressively hot until the 1st September, when the days became cooler and more pleasant until the end of the retreat.

The field medical services during this period were constantly

on the move, but, at the same time, collecting and carrying sick and wounded along with them and transferring them to the lines of communication whenever opportunities occurred.

The Cavalry Field Ambulances.

The four cavalry field ambulances with the *Cavalry Division* moved from Quievrain to Audregnies, where they bivouacked on the night of the 23rd/24th August. At 6 a.m. on the 24th, they were ordered to march southwards in one column, and moved off with No. 2 Cavalry Field Ambulance leading, followed by Nos. 3, 1 and 4. The column was placed under the command of the senior officer, Major T. H. J. C. Goodwin, of No. 4 Cavalry Field Ambulance. The D.A.D.M.S. of the division, Major E. T. F. Birrell, accompanied him, while the A.D.M.S., Colonel S. Hickson, went with the headquarters of the Cavalry Division. At Jenlain, No. 2 Cavalry Field Ambulance was ordered by Major Goodwin to proceed to a point three-quarters of a mile south-east of Sepmeries and open a dressing station, to which sick and wounded collected by the other ambulances of the column would be sent; but finding no suitable position there its commanding officer proceeded to Ruesnes and opened his tent division in an empty château. He collected there 18 sick and wounded. The other cavalry field ambulances had moved in the meantime to Orsinnal. Apparently they were unable to find the position of the dressing station, and attempts to communicate with it failed. However, Major Goodwin arrived at Ruesnes the following morning and ordered No. 2 Cavalry Field Ambulance to retire at once with its sick and wounded on Vertain, where the four field ambulances again joined up and marched in column, with No. 2 leading, through Solesmes to Le Cateau. During the march No. 2 continued to carry the 18 casualties collected at Ruesnes, but before reaching Vertain, Nos. 1, 3 and 4 had already evacuated 27 sick and 22 wounded to motor lorries returning to railhead at Le Cateau.

As the column approached Le Cateau, the two ambulances in the rear of the column, No. 1 and No. 4, with " B " Section of No. 3, lost touch with the head of the column, and went on by the road west of Le Cateau to Reumont, while No. 2 and " A " Section of No. 3, with Major Goodwin, Major Birrell, and Captain Crean, of No. 1 Cavalry Field Ambulance, the light ambulance wagons of No. 1 and some of No. 4 went into Le Cateau. The officer commanding No. 3 Cavalry Field Ambulance thus describes the march into the town

—" a terrible affair—very dark, a treble line of transport on the road with moving cavalry, infantry and refugees—column broken by troops and guns moving out to positions. Le Cateau full of sick and wounded and exhausted troops." In these circumstances No. 2 Cavalry Field Ambulance and "A" Section of No. 3 at once set to work and opened a dressing station in a girls' school in the centre of the square, where they worked throughout the night of the 25th/26th August. They left hurriedly in the morning of the 26th just as the German troops were entering the town, taking with them thirty-five sick and wounded whom they collected during the night and the eighteen collected at Ruesnes by No. 2 on the night of the 24th/25th August. They left Le Cateau in a south-easterly direction by the road leading to Bazuel and Catillon, where it was supposed the Cavalry Division had gone. They were thus completely cut off from the remainder of the cavalry field ambulance column, and remained so until the end of the retreat. At Bazuel, they came in touch with the 3rd Cavalry Brigade. A medical officer and two of the light ambulance wagons of No. 3 Cavalry Field Ambulance were then attached to the brigade, and a similar party was sent with the 3rd R.F.A. Brigade Ammunition Column. General Gough, who commanded the brigade, informed them that the headquarters of the Cavalry Division were at Ligny, some ten miles or more to the west, and the column, after marching to Catillon, turned south to Mazinghien, where it intended to turn west through St. Souplet to Ligny, but in order to avoid capture by the enemy, it had to continue to march southwards to Wassigny, where its load of sick and wounded, who now numbered seventy-five, including five officers, were transferred to a train just on the point of leaving the station with civilian refugees. The column then went on to Hanappes, where it received orders from a staff officer of the Ist Corps on the morning of the 27th to make for St. Quentin in a south-westerly direction. Consequently it went westwards to Le Petit Verly, where it met the G.O.C. of the 5th Cavalry Brigade, who informed them that it was dangerous to proceed further in that direction. It then moved south to Montigny, where again it attempted to go westward, but was told by the inhabitants that the route was dangerous. Orders were then obtained from the officer commanding the flank guard to march to Mont d'Origny ; and on the following day, having abandoned all hope of getting across the line to St. Quentin, it joined the Divisional Train of the 2nd Division, and marched with it to

La Fère, which was reached at 7.30 a.m. on the 28th. It marched with the Ist Corps till the 29th, and then joined the 3rd Cavalry Brigade Ammunition Column. The Officer Commanding No. 3 Cavalry Field Ambulance writes on the 29th August—"All along we have been working without orders from the staff and, acting on our own intelligence, have just managed to avoid capture on many occasions. Under the circumstances it is surprising that we have managed to collect so many wounded"—and again on the 30th August, "Route hard to follow, no maps, no means of evacuation."

During the remaining days of the retreat No. 2 Cavalry Field Ambulance and "A" Section of No. 3 marched with the 3rd Cavalry Brigade Ammunition Column to Vilbert, where the brigade bivouacked on the 5th September. Major Goodwin and Major Birrell remained with the column throughout the retreat. Captain Crean who was also with them, with the light ambulance wagons of No. 1 Cavalry Field Ambulance, rejoined his unit on the 6th September.

The remaining portion of the cavalry field ambulance column, consisting of "B" Section of No. 3, with No. 1 and No. 4 Cavalry Field Ambulances, which broke off at Le Cateau and had gone on to Reumont on the night of the 25th August, was there ordered by the A.D.M.S. of the 5th Division to take over sick from his division at 6 a.m. on the 26th and retire with them, but when it was known that the positions at Le Cateau were to be held against the advance of the enemy, this order was cancelled and the cavalry field ambulances were instructed to open a reception hospital at Bertry. Two hospitals were consequently opened there, and fifty sick were transferred to them from the 5th Division. They were almost immediately evacuated to empty supply lorries, which were returning to railhead. Some fifty lightly wounded were then collected and at 3.30 p.m. of the 26th the column was ordered by a staff officer to retire to St. Quentin. It arrived there at 7 a.m. the following morning, carrying with it the wounded who had been collected at Bertry. The wounded were then transferred to an ambulance train and the column continued its march southwards through Flavy-le-Martel and Noyon along the line of retreat of the IInd Corps to Lassigny, where, on the 29th August, for the first time since commencing the retreat it came in touch with the headquarters of the Cavalry Division.

During the remaining days of the retreat the column marched with the Cavalry Division and without further incident. Sick

were transferred to empty supply lorries at Royallieu on the 30th August and to trains at Senlis on the 1st September and at Gournay-Chells on the 3rd September.

The 5th Cavalry Field Ambulance accompanied the *5th Cavalry Brigade* throughout the retreat, generally following the line of retreat of the 1st and 2nd Divisions. The bearer division and light ambulance wagons marched behind the brigade ammunition column or followed the brigade in action, collecting wounded at various points during rearguard actions. The tent division and heavy transport marched with the brigade transport by a different road. Not many incidents are recorded, but at Moy on the 28th August a sharp attack by the German cavalry was beaten off and the bearer division was left to collect the wounded under sniping fire. Lieut. Wyler, with one of the ambulance wagons, was captured at a farm, but he was well treated and released next day together with a wounded officer.

The Field Ambulances of the Ist Corps.

With the exception of the capture of the A.D.M.S. and D.A.D.M.S. of the 2nd Division, and of the greater part of No. 4 Field Ambulance and " B " and " C " Sections of No. 19 at Landrecies on the 26th August, the retreat of the Ist Corps was not marked by many outstanding incidents affecting the medical services.

The A.D.M.S. of the *1st Division*, Colonel G. Cree, with his D.A.D.M.S., marched at the tail of the column with the 1st echelon of divisional headquarters. They had previously marched with the 2nd echelon, but in that position found themselves out of touch with the medical requirements of the division. The column was led by the divisional train and with it went the tent divisions of the three field ambulances. The bearer divisions, each with three ambulance wagons, remained with the brigades to pick up the footsore and stragglers and were billeted in the brigade areas. They cleared their sick to the tent divisions. At Favril on the 26th August part of the 1st Division fought a rearguard action and the bearer division of No. 3 Field Ambulance was detached to collect the wounded. It collected about thirty and took them on to Etreux. On the following day, the tent divisions had now more sick and wounded than they could carry, and at Etreux arrangements were made to collect all the patients into No. 3 and leave that unit behind to load them into an empty supply train which was waiting there. About 150 sick and wounded were

placed on it, and a medical officer with a serjeant of the R.A.M.C., Serjeant Cooke, who had given great assistance in connexion with loading the train,* was placed in charge.

At La Fère on the 28th August the 1st Division A.D.M.S. was ordered to make arrangements for the evacuation to ambulance trains of all the sick and wounded from the 1st and 2nd Divisions and 5th Cavalry Brigade. The patients were collected into the French military hospital at La Fère, and despatched in two trains that night and the next morning.

The Ist Corps was thus more or less cleared of its casualties, but sick and wounded continued to be collected and carried in the ambulance wagons. At St. Gobain some of them were left in a French Red Cross hospital, but an objection was raised to this, and all except those totally unfit for transport went on with the field ambulances, country carts being hired for them in villages through which the division passed. The 1st Division was eventually cleared of its sick to trains at Anizy and Soissons on the 31st August. Subsequently evacuation was carried out by the normal method of sending the sick in empty lorries of the supply column to railheads. The two motor lorries, however, which were to have been attached to supply columns specially for the evacuation of sick, do not seem to have materialized.

The records of the medical services of the *2nd Division* during the retreat are incomplete. The division had the misfortune to lose both its A.D.M.S. (Colonel H. Thompson) and its D.A.D.M.S. (Major A. E. S. Irvine) together with the greater portion of No. 4 Field Ambulance on the 26th August. Late at night on the 24th August, the A.D.M.S., finding a large number of sick and wounded at Bavai, requisitioned every kind of vehicle and had them conveyed to Aulnoye. He heard that an ambulance train was at St. Quentin, and had sent urgent messages to have it sent on to Aulnoye. No. 1 and No. 2 Ambulance Trains consequently arrived there on their first journey and took over the sick and wounded, who had been sent on from Bavai with the field ambulances.

The three field ambulances of the division then marched south, and about 5 p.m. on the 25th August, No. 6 had reached Maroilles, and No. 4 a point just east of Landrecies. No. 5 appears to have remained in Noyelles during the 25th and

* This train is described as consisting of two wagons fitted with Brechôt apparatus. The floors of the remaining wagons were bedded with straw. The driver of the train had bolted, but another was procured, and a guard placed on the engine. This train ran the gauntlet of the advancing Germans at Wassigny, and reached Havre eventually in safety.

to have gone on to Barzy, some six miles south of Maroilles and Landrecies, on the following day, after moving about in the area Noyelles, Taisnières and Leval. In the meantime, on the night of the 25th August, a sharp attack, which lasted till midnight, was made from the Forest of Mormal on the crossing of the Sambre at a bridge held by the 1st Battalion of the Royal Berkshire Regiment, north-west of Maroilles, and at Landrecies, where there was a battalion of the Coldstream Guards. "B" and "C" Sections of No. 19 Field Ambulance were at that time in Landrecies, with the headquarters of the Ist Corps. After marching from Maubeuge to Bavai on the 24th August and on to Vieux Mesnil, they had gone on to Landrecies on the 25th August and arrived there at 5 p.m.

When the attack, therefore, was launched on Landrecies and Maroilles, the medical situation in the neighbourhood was as shown on the map.* No. 5 Field Ambulance was at Noyelles, No. 6 at Maroilles, No. 4 east of Landrecies, and "B" and "C" Sections of No. 19 in Landrecies itself. "B" and "C" Sections of No. 19 Field Ambulance at once opened a dressing station in the school at Landrecies, and were joined by the bearer sub-division of "B" Section of No. 4 under Major Faulkner. At 2 a.m. on the 26th the bearer sub-divisions of these sections were ordered to withdraw with all available transport, leaving the two tent sub-divisions of No. 19 Field Ambulance behind with the wounded, of whom about 100 had been collected.† No. 4 Field Ambulance, less the bearer sub-division of "B" Section, marched to Favril after the attack was launched, and at 2.30 a.m. on the 26th withdrew further down the road and joined the main body of the 4th Brigade. "A" Section found a place in the column, but "B" and "C" Sections, while waiting in rear of the brigade, received an order from the Brigade Major to return to Landrecies, to "treat and evacuate the wounded and bury the dead." Although it was represented that it would be sufficient to send back "B" and "C" Sections only, the whole of the field ambulance was ordered to return, and some delay was caused until "A" Section could be extracted from the column and turned back. "B" and "C" Sections, however, had gone on to Landrecies, and, by the time "A" Section had reached the town, had loaded most of their ambulance wagons with wounded. At 8 a.m. the wagons were full and Major Faulkner with six ambulance wagons loaded with fifty-one sitting up

* Map 2 in pocket in cover of volume.

† The total casualties in killed, wounded and missing were 126.

cases, including three officers, marched out of Landrecies, as Lieut.-Colonel Collingwood, who commanded No. 4 Field Ambulance, and part of " A " Section marched in. The heavy transport with Q.M. Jones and the remainder of the section was met on the road by Major Faulkner further on, and turned back with him.

The town and the scene of the night attack were then searched for wounded and killed, but no wounded and only four dead were found. The wounded who had already been collected, some of them in a French military hospital, were then concentrated in the dressing station of No. 19 Field Ambulance, but before they could be got away the Germans had entered Landrecies, and eight officers of No. 4, four of No. 19,* with Lieut. Butler of No. 13 Field Ambulance, and Captain Dwyer, medical officer of the Duke of Cornwall's Light Infantry, who had lost their units and joined No. 4 Field Ambulance, and 219 other ranks of the R.A.M.C. were captured. They were left in Landrecies in charge of the wounded for a day or two longer, and apparently were given every facility for attending to them.

When the attack north-west of Maroilles was made, No. 6 Field Ambulance left the town for a field outside, but was ordered back and opened a dressing station at 10 p.m. on the 25th August. After midnight the field ambulance again withdrew with fourteen wounded, and marched during the night to Prisches. The D.A.D.M.S. of the 2nd Division (Major Irvine), however, remained in Maroilles after the departure of No. 6 Field Ambulance. He found that some thirty-two wounded had been collected to the regimental aid post of the Berkshires and were in need of assistance. Obtaining dressings from a chemist's shop, and assisted by the priest and a young French lady, he spent the night of the 25th/26th August in Maroilles attending to the wounded. There was a local depôt of the French Red Cross Society in the town with abundant stores of medical comforts, which proved invaluable.

While at Prisches, Colonel Thompson heard that Major Irvine required assistance, and went back to Maroilles with a detachment of " A " Section of No. 6 Field Ambulance,

* Major Collingwood, Captain Lynch, Captain Sutcliffe, Lieutenant Hattersley, Lieutenant Brown, Lieutenant Routh, Lieutenant Hills and Lieutenant Lauder of No. 4; and Major Fry, Major Furness, Captain Beaman and Lieutenant Preston of No. 19. The tent divisions remaining in Landrecies were under the impression that though the British had left the town, the Germans had been driven back 8 or 10 kilometres and they thought themselves safe for a few hours, at all events, on the 26th of August.

consisting of Captain Priestley, Captain Egan, twelve men and the four ambulance wagons, while the rest of the field ambulance, failing to receive definite orders, continued to retreat southwards.

As the enemy seemed to have withdrawn, and there were many French troops in and around Maroilles, Colonel Thompson, Major Irvine and the detachment continued to attend to the wounded during the day, and did not leave till towards evening. They then lost their way in the dark. Colonel Thompson reached Prisches, and was captured there next morning by the enemy. Major Irvine, and Captains Priestley and Egan, with the convoy of wounded, wandered about during the night, but fell into the hands of a German cavalry patrol in the early morning of the 27th and were taken to Landrecies, where they found the captured portions of No. 4 and No. 19 Field Ambulances with Captain Dwyer and Lieutenant Butler.*

The 2nd Division was thus deprived of the greater portion of No. 4 Field Ambulance, and of a detachment of No. 6. The further retreat of its field ambulances was without incident until the division had passed through Soissons and Villers Cotterets. No. 5 Field Ambulance retreated in the midst of columns of French troops to Etreux, where, on the 27th August, its commanding officer, Lieut.-Colonel Copeland, was ordered to act as A.D.M.S. of the division in place of Colonel Thompson.

At Villers Cotterets, on the 1st September, the rearguard of the division, the 4th Brigade, was attacked by enemy cavalry and infantry coming through the Forest of Retz. In the action that followed the remnant of No. 4 opened an advanced dressing station in a sugar factory apparently at Boursonne, four miles from Villers Cotterets, and from there cleared wounded back to No. 5 Field Ambulance, which had opened in a château at Betz, three or four miles further back. A large number of wounded was collected and treated in these field ambulances during the night of the 1st/2nd September. They were evacuated by supply lorries before the retreat was continued.

The Field Ambulances of the IInd Corps.

The medical services of the IInd Corps, which had been so severely tried on the 23rd August in the neighbourhood

* Major Irvine and Captain Dwyer, who was captured the previous day at Landrecies, were taken to Bavai on the 29th August, and escaped from there on the 11th September. Major Irvine rejoined the 2nd Division on the Aisne on the 25th September.

of Mons and the canal, were called upon three days later, after its two divisions had retired on Caudry and Le Cateau, to respond to a still more serious effort. When the exhausted troops of the 3rd and 5th Divisions, unable to continue the retreat, lined the shallow trenches rapidly prepared on the ridge and in the villages south of the Cambrai–Le Cateau road, the 5th Division, which it will be remembered had crossed to the inner flank of the corps, occupied the line from Troisvilles to the Le Cateau-Landrecies road, with the 3rd Division in the centre between Caudry and Troisvilles, while the 4th Division on the left extended the line through Haucourt and Esnes north of the Warnelle brook. The 19th Infantry Brigade, which had come into Le Cateau during the night of the 25th/26th August, withdrew, after some confused fighting in the town, to a position between Reumont and St. Benin in support of the 5th Division. All the field ambulances of the 3rd and 5th Divisions were now with their units, but none of the 4th Division had arrived.*

To take the divisions in detail, the records of the *3rd Division* medical services are incomplete, but from the diary of the A.D.M.S., it appears that, while on the 24th August as many wounded as possible were taken back from Mons, thirty had to be left in Nouvelles, and twelve at Noirchain, when the headquarters retired. With regard to its field ambulances, so far as can be ascertained, No. 7 Field Ambulance arrived at the Caudry–Troisvilles positions with its bearer and tent divisions out of touch with one another. On the 24th August, " B " Section of the unit had retired independently from Frameries to Bavai, while " A " and " C " Sections remained at Ciply till 3 p.m. and then went on to Bavai, where they arrived at 5 p.m. They picked up wounded on the way and transferred two officers and twenty-four other ranks to the French hospital. The unit was now complete with its bearer and tent divisions, and was deployed for action. The tent division was ordered to establish a dressing station at Amfroipret and Gommegnies; the bearer division to go forward, collect wounded along the Bavai–St. Waast road, and evacuate them to the dressing station. There was no fighting, however, and in the subsequent movement to Caudry on the 25th August, the bearer and tent divisions failed to come together. The bearer division under Major Fielding, with the ten ambulance wagons of the unit, kept in touch with the 7th Brigade as far as Caudry. During the fierce fighting there, it acted as a dressing station, and, when the retirement

* Map 3 in pocket in cover of volume.

was ordered in the afternoon, fell back with the ambulance wagons full of wounded, marching through Ligny, Serain and Prémont to Bohain, and, during the night, to Lesdins on the Bohain–St. Quentin road, where it arrived on the morning of the 27th. The march was continued during the day to St. Quentin, and at 11 p.m. the wounded were eventually transferred to an ambulance train. The tent division of No. 7 Field Ambulance reached Troisvilles at night on the 25th August by way of Vendegies and Inchy. During the forenoon of the 26th it was ordered by the D.D.M.S. of the IInd Corps to open a hospital at Bertry, to which the rear portion of the cavalry field ambulance column came on the same day. The 3rd Division headquarters were there, and when, towards 4 p.m., the retirement was commenced the tent division of No. 7 Field Ambulance accompanied the headquarters, moving first to Fresnoy and reaching St. Quentin next day. It left behind, by order of the D.D.M.S. of the IInd Corps, fourteen N.C.O.'s and men with Captain Corbett, medical officer of the 2nd Battalion South Lancashire Regiment, Lieutenant Davies and six other ranks of No. 4 Cavalry Field Ambulance, in charge of those wounded who could not be moved. At midnight of the 26th it received orders at Beaurevoir to clear wounded to the railway at Fresnoy. It marched all night of the 26th/27th, and arrived at Fresnoy railway station at 5 a.m. in the morning, where fifteen sick and wounded were evacuated.

The horses of No. 7 Field Ambulance were now so exhausted that the wagons had to be helped along by the men, and Lieut.-Colonel Kennedy, commanding the unit, then sent a message to St. Quentin to say that his field ambulance would be unable to move for some hours. Consequently he was ordered by a message from the IInd Corps headquarters to entrain the personnel and as much equipment as possible. There was a hurried entrainment and a hasty departure, as all the railway officials were abandoning Fresnoy. Much of the equipment had to be left behind, and so, too, were Lieut.-Colonel Kennedy, two of his officers, and a chaplain. They had gone into the town, but managed to rejoin the tent division later at St. Quentin by getting on board a returning locomotive that was taking back a truck load of French soldiers. The transport of the field ambulance had also to be left behind, but the wagons and some of the equipment were brought on later by a serjeant of the K.O.S.B. and a party of stragglers, and handed over at Pontoise to No. 15 Field Ambulance on the 29th August.

The personnel of the tent division of No. 7 Field Ambulance, after furnishing railway station parties at St. Quentin on the 27th, at Noyon on the 28th, at Compiègne on the 29th and afterwards at Dammartin, was kept on the train and taken to Le Mans, where it remained from the 31st August to the 4th September, being thus entirely separated from its formation and from the bearer division during the remainder of the retreat. No light is thrown on this circumstance in the diaries of the administrative medical services; and the only explanation appears to be that the tent division of No. 7 Field Ambulance, once it was entrained, was left on trucks, which eventually found their way to the lines of communication, where the D.M.S. understood it to have been sent to re-equip. Its personnel was then employed by him in forming rest station parties at various railheads along the line of evacuation.

No. 8 Field Ambulance of the 3rd Division had marched from Norchain early in the morning of the 24th August and reached Bavai at noon, where two of the officers were left to help in attending to wounded collected into the convent there, while the rest of the unit went on during the afternoon to Bermeries. The officers left behind joined it there at night and the ambulance continued its march after midnight and went on during the night and day to Troisvilles, where it arrived at sunset on the 25th and bivouacked alongside the tent division of No. 7.

Early in the morning of the 26th August No. 8 Field Ambulance went on to Montigny and prepared a dressing station in the church, two schools and a small chapel. Mattresses lent by villagers were placed in them and eggs and milk were collected in the town. Everything in fact was got ready for the wounded, who began to arrive during the forenoon, the ambulance wagons and bearer divisions collecting the wounded from the direction of Caudry, Audencourt and Troisvilles. While the work of the dressing station was in full swing and operations on urgent cases actually being performed, the field ambulance was ordered, at 4 p.m., to retire immediately, leaving Major A. G. Thompson and six orderlies in charge of those wounded who could not be removed in the ambulance wagons. As nearly all of the wagons were out collecting wounded, only a few could be got away. About 120 wounded were left behind and were afterwards captured, together with Major Thompson and his orderlies. The field ambulance had lost in fact about forty of its personnel during the battle. The ambulance retreated through Clary to Beaurevoir, reaching the latter at 11 p.m. in pouring rain.

Some of its missing ambulance wagons reached Beaurevoir the same night. The march was continued through the night of the 26th/27th to St. Quentin, which was reached in the morning. Some wounded were here evacuated to the railway station. The remaining days of the retreat were without special incidents beyond the loss of a baggage wagon which had been driven into the canal south of Ham on the 28th August, and had to be abandoned with the records of the unit and a considerable portion of the officers' and men's kits.

No. 9 Field Ambulance, after halting at St. Waas on the night of the 23rd/24th August, marched northwards through Bavai and Hon, where it was ordered to advance no further than Sars-la-Bruyère, but before reaching that village it was ordered back through Bavai to Amfroipret and Gommegnies. "C" Section bearers, however, with the ten ambulance wagons were sent on to Sars. They were employed during the rest of the day collecting wounded north of Bavai and Hon, and continued this work till the last of the infantry had retired. They then went on to Bavai, and remained there during the night, after transferring seventeen wounded to an improvised Red Cross hospital of the French. They left at 6 a.m. on the 25th August and rejoined their unit at Le Quesnoy. Some fourteen sick and wounded had been collected on the way and transferred to a train at Le Quesnoy.

After leaving Le Quesnoy, No. 9 Field Ambulance was directed to proceed to Solesmes, where, obtaining no information as to the position of the division and the route to be followed, and being ordered out of the town, its commanding officer took it, on his own initiative, to Le Cateau. Being still without orders or information, he marched at 2 a.m. of the 26th to Busigny in the hope of finding the division. There he entrained a few sick and wounded collected during the retirement on the previous day, and now received orders from the divisional A.D.M.S. to proceed to Maretz and remain in reserve during the action that was being fought at Le Cateau. A dressing station was opened in a farm at Maretz, as several wounded were being brought there chiefly in motor lorries. The field ambulance eventually retired during the afternoon and night to Estrées, picking up a few more wounded on the way.

At Estrées it appears to have suffered from the reception of contradictory orders, but eventually marched in a column of other transport during the night to St. Quentin and on to Ham, where it arrived at 11 p.m. on the 27th. In the confusion of starting, three of its medical officers, with other personnel and

vehicles, got detached and did not rejoin till the 29th August at Cuts in the rest area near Carlepont. The subsequent work of No. 9 Field Ambulance during the retreat had no special interest.

The records of the medical units of the *5th Division* gave a clearer impression of the medical services during the retreat and battle of Le Cateau than do those of the 3rd Division. The 5th Division withdrew from Dour during the afternoon of the 24th August, reached Le Cateau in the evening of the 25th, and took up a defensive position between it and Troisvilles. It came under shell-fire during the morning of the 26th, and began to retire under heavy shrapnel fire about 4 p.m. to Estrées. Many lightly wounded were got away on limbers, country carts, and ambulance wagons, but all the severely wounded had to be left behind in the villages, owing to the impossibility of getting the ambulance wagons over the Reumont ridge. The bearers, owing to the heavy shell fire, were unable to reach the regimental aid posts and only managed to collect about ten cases. Major Brunskill, the D.A.D.M.S. of the Division, with Captains Crymble and Kelly and thirty-seven other ranks of No. 14 Field Ambulance, remained behind with the wounded and were captured. The division, in retreating through Ham, Pontoise, Cuts, Carlepont and Crépy, between the 27th and 31st August, was constantly engaged in rearguard actions, but all the sick and wounded during this time were collected and evacuated from its field ambulances, whenever the opportunity occurred, by motor lorries, supply wagons or train.

The records of the field ambulances detail several points of interest during this period. No. 13 Field Ambulance before retiring from Dour on the 24th August had sent Lieutenant Butler and the bearer sub-division of "C" Section forward to bring in slightly wounded and stragglers to Dour. Lieutenant Nelson and two orderlies were sent to Elouges for the same purpose; and when, at noon, the field ambulance was ordered to retire neither of these detatchments had returned. Besides these two officers, twenty-eight of the R.A.M.C. and three A.S.C. drivers with three ambulance wagons were then missing. Lieutenant Butler and his bearer sub-division, as already recorded, found their way to Landrecies, where they were captured with No. 4 Field Ambulance on the 26th August. The main body of No. 13 Field Ambulance, marching behind the 13th Brigade, reached Le Cateau about 3 o'clock in the

afternoon of the 25th August, and was there ordered to form a dressing station at Reumont, where it worked till 11 o'clock in the forenoon of the 26th, and then retired with all its wounded and equipment to Maretz. Fifty wounded officers and men were collected along the road, and after being attended to at Maretz were sent to St. Quentin in the divisional supply column lorries. The field ambulance afterwards marched to Estrées, arriving at 9 p.m., and after some five hours' rest continued the march during the night of the 26th/27th to St. Quentin, which was reached at 7.30 a.m. on the 27th. On the 31st August it had reached Crepy-en-Valois with the two officers, Lieutenants Butler and Nelson, and fifty other ranks missing. At Crepy-en-Valois, sixty-seven sick and wounded, who had been carried with the ambulance, were entrained and went to Rouen.

No. 14 Field Ambulance after marching from Valenciennes on the 23rd August to Bavai was under orders to proceed to Dour, but on reaching La Rosière on the 24th received orders to retire to Villers-Pol, where it bivouacked for the night, and then went on to Le Cateau. It arrived at Le Cateau at 2.45 p.m. on the 25th and opened a dressing station in the town. At 4 a.m. on the 26th it was ordered to retire on Maretz, but the order being afterwards cancelled in consequence of the decision to hold the position during the day, No. 14 Field Ambulance selected a site for a dressing station in a field near Honnechy station, and had received about fifty sick and wounded between 11 a.m. and 1.30 p.m., when a battery took up a position close to it. This drew shell-fire on the dressing station, and it had to be moved elsewhere. The walking wounded were hurriedly sent away in charge of the chaplain in the direction of Maretz, and at 3.30 p.m., as it was no longer safe to remain, although no shells actually fell into the space occupied by it, the dressing station was closed and the ambulance retired with the rest of the wounded by way of Busigny to Maretz. About eighty wounded were collected on the way and sent on to St. Quentin, where the unit arrived at 4 p.m. on the 27th August, and transferred its sick and wounded to an ambulance train. In its further retreat No. 14 Field Ambulance evacuated two officers and thirty-one other ranks to a clearing hospital at Noyon on the 29th ; one officer and seventy-three other ranks to Compiègne on the 30th August, and fifty-seven to an ambulance train at Crépy on the 1st September.

No. 15 Field Ambulance followed No. 14 to La Rosière on the 24th August and from there retired with it to Villers-Pol

after a long and tiring day, having been on the march from Jenlain since 5 a.m. On the 25th it went on to Le Cateau, "C" Section being detailed for duty with the rearguard. Le Cateau was reached at 4.30 p.m. and the field ambulance bivouacked in a field just south of Troisvilles, where it was rejoined by "C" Section with fifty wounded. Dressing station tents were pitched and the wounded attended to during the night of the 25th/26th. In the morning of the 26th, the A.D.M.S. of the division, Colonel Sawyer, gave orders for the wounded to be sent to Bertry, where it was said that a train would be waiting; but on the ambulance wagons arriving at Bertry there was no train and the wounded had to be made as comfortable as possible in a house by the railway station, They were left there, awaiting the arrival of the train, in charge of a local doctor.*

No. 15 Field Ambulance then joined the column of the 5th Division in its retreat southwards, but at Reumont was informed that the retreat had been cancelled and that the field ambulance was to prepare for the collection of wounded of the 15th Brigade in the area around and to the east of Troisvilles. The bearer sub-divisions of "A" and "C" Sections were sent forward with ambulance wagons to work over this area. The tent sub-division of "C" Section opened a dressing station in a farmhouse at the junction of the roads about a quarter of a mile south of Reumont. The tent sub-division of "A" Section went further down the road to Maurois, where "B" Section was kept in reserve. The local school was taken over as a dressing station, in which much help was given by the parish priest and women of the village, who brought beds and mattresses, cut up their sheets into bandages, and supplied quantities of milk, wine and eggs. Their humane and ready assistance proved invaluable. Twenty-three wounded were received by 12.30 p.m., when a stampede of transport from Reumont through Maurois took place, and swept away with it the transport of "B" Section and the general service wagons of "A" Section, which had been drawn up in the main street. They were eventually collected near Maretz and brought back by Major Ormsby, commanding "B" Section, but before the ambulance wagons of the section could be brought to the dressing station, shells were bursting in the village and the field ambulance was obliged to retire, leaving behind those wounded who were unable to walk.

* It was probably this incident which led the A.D.M.S. of the 5th Division to instruct the cavalry field ambulances to open a hospital at Bertry.

The officer commanding the unit would not permit any of his officers to remain behind, and the wounded were left in charge of a local doctor, the village priest, and a R.A.M.C. orderly of No. 14 Field Ambulance. The dressing station of No. 15 Field Ambulance had become the main dressing station for the division during the 26th August, as the wounded of the 14th Brigade on the right found their way into it, instead of to that of No. 14 Field Ambulance, owing to the exposed position of the latter.

In the subsequent retreat No. 15 Field Ambulance arrived at Joncourt, near Estrées, in the evening of the 26th. Its bearer sub-divisions and ambulance wagons of "A" and "C" Sections, which had been collecting wounded at Troisvilles, rejoined the unit at 11.30 p.m. They had some sixty wounded with them and about forty more had been collected on the road during the retreat by the main body. The wounded were all brought on to St. Quentin during a night march, and transferred to No. 6 Clearing Hospital there in the morning of the 27th. On the 29th August, when the ambulance was resting at Pontoise, ten men only were found missing. Amongst them was the driver of the water cart of "A" Section, which had stampeded at Maurois. He was not seen again until the 1st September, when he rejoined the unit at Ognes, but without the cart, which appears to have been broken by fugitives clambering on it. The wagons and equipment which had been abandoned by the tent division of No. 7 Field Ambulance, when it entrained at Fresnoy, were handed over to No. 15 Field Ambulance at Pontoise. There was no further incident of note in connexion with this field ambulance during the remaining days of the retreat.

The Field Ambulances of the IIIrd Corps.

It will be remembered that the *4th Division*, which was on the left flank at the battle of Le Cateau, had fallen back from Briastre on the 25th August and was without its field ambulances during the battle. Consequently, in order to provide some form of ambulance transport, twenty country carts had been collected by the 12th Brigade at Viesly during the retirement of the division from Briastre on the 25th August. Four of them had been attached to the 10th Brigade during a rearguard action north of Viesly. The remainder were placed in charge of Captain Grogan, R.A.M.C., and prepared with straw bedding for the transport of wounded. They were then distributed to the brigades. Six, retained under Captain

Grogan's direct charge, marched with the rearguard and picked up stragglers. When the division, therefore, was fighting on the positions between Haucourt and Esnes on the 26th August, there were no medical units with it and the formation of dressing stations and the collection and evacuation of wounded were entirely a matter of improvisation. How well this was carried out is recorded in a report by the A.D.M.S. of the division, Colonel Faunce.

The enemy attacked the bivouacs of the division at Haucourt about 6 a.m. on the 26th August, and about fourteen casualties were collected and dressed in a farm-house at divisional headquarters by the personnel of the A.D.M.S. office. On the order to retire, all the wounded there, with the exception of those who were unfit to be moved, were placed on the wagons of divisional headquarters and brought back to Selvigny. Colonel Faunce also proceeded to Selvigny with the object of collecting more transport, and obtained fourteen farm carts, which later on were loaded with wounded and succeeded in reaching Peronne, where the wounded were entrained. In the meantime, the D.A.D.M.S., Major Ensor, had formed a dressing station with the R.A.M.C. personnel and medical equipment of divisional headquarters at the cross-roads about three kilometres south of Haucourt. The action was by this time well developed, and many wounded fit for transport were dressed there and sent back on every obtainable kind of vehicle.

About 7 a.m. Major Ensor was informed that the line of the retreat of the division in case of necessity would be through Selvigny and Malincourt to Villers Outreaux, and immediately afterwards the troops began to retire on Selvigny. The dressing station which he had formed now came under enemy fire and they withdrew to the north end of Selvigny. Many wounded were again dressed here and evacuated. For the most part during this stage of the action they arrived with their first field dressings carefully applied by the regimental medical services. About 8 a.m. the fighting line took up a position near the dressing station, which was consequently withdrawn through the town to the south end under shelter of houses there. It remained in this situation for some hours. Large numbers of wounded were attended to and the serious cases made comfortable in two houses near at hand. A considerable number was evacuated by means of motor cars and other vehicles retiring towards Malincourt, and all patients who were able to walk were directed to make their way there.

A large number unable to walk, however, continued to accumulate until about 10.30 a.m. when the supply column of the Cavalry Division happened to pass through Selvigny. Major Ensor stopped it and placed on six lorries all the wounded who had not yet been evacuated, and in this way more than forty casualties were removed, one of the R.A.M.C. clerical staff being sent back in charge of them.

About 11 a.m. the dressing material became exhausted, as the only supply available was that of the medical equipment of divisional headquarters ; but a further supply was obtained from the regimental equipment of the 2nd Battalion Seaforth Highlanders, and the inhabitants of the village supplied linen for bandages and arm slings. About noon there was a lull in the fighting, and parties of men accompanied by the regimental medical officers went out to the area over which they had retired and succeeded in collecting several more wounded.

After an interval of about an hour fighting recommenced, and Major Ensor then moved the dressing station to a school at the north end of the village, in order to bring it nearer to the positions and shorten the distance over which the wounded had to be carried back. Here the dressing station was again rapidly filled with wounded, and all able to walk were directed once more to retire towards Malincourt. A small cart had been obtained in the village and was employed in bringing severely wounded back from the positions to the dressing station, and in this way materially assisted the work of the regimental stretcher bearers. About 3.30 p.m. Selvigny was heavily shelled, creating much confusion, but Major Ensor continued to attend to wounded at the dressing station till nearly 6 o'clock in the evening, when, as the troops were retiring, he loaded the one available cart with wounded who were fit for transport and brought them to Le Catelet, where they were transferred to a French Red Cross hospital.* Leaving the others behind in Selvigny, he rejoined his divisional headquarters at 5 a.m. on the 27th August.

In the absence of the field ambulances, which did not reach the division till the 29th August, every kind of vehicle was used for carrying the sick, wounded, and footsore, of which there was a large number. The carts collected at Viesly continued to march with the division under Captain Grogan's

* Four medical officers of the battalions of the 11th Brigade were lost during this action. They were replaced on the 31st August from the field ambulances.

charge, but ten of them deserted on the 28th August at Voyennes. Many sick and wounded were carried on gun limbers and with the ammunition column. On the morning of the 28th orders were given to abandon some of the baggage in order that the baggage section of the train might be available for casualties. A large country cart capable of carrying nineteen wounded was obtained at Voyennes and placed in charge of Lieutenant Bell, of No. 14 Field Ambulance, who had lost his unit and had reported himself at the headquarters of the 4th Division. When the division reached Muirancourt, on the night of the 28th August, all the sick and wounded thus brought along were transferred to motor lorries and sent on to Noyon. Major Ensor accompanied them and transferred them to the civil hospital there, but those of them who were fit for further transport were evacuated by ambulance train at Beaurains on the evening of the 29th August.

Two of the field ambulances, No. 10 and No. 12, now joined the 4th Division. The A.D.M.S., who had left it in search of his field ambulances when the action at Le Cateau commenced, also rejoined on the 29th August at Noyon. No. 10 Field Ambulance had arrived in Rouen on the 23rd August, and entrained there on the 25th, arriving at St. Quentin the following day. It was then ordered to march to Noyon. It rested at Ham on the night of the 26th/27th, reached Noyon in the afternoon of the 27th, and went on the same day to Sempigny, about two miles further south. It opened a dressing station there during the 28th and 29th, and treated a large number of footsore men and a few wounded who had straggled on in advance of the troops. Those requiring further treatment were evacuated to the railway station at Noyon. On the 29th the unit was ordered to return to Noyon and from there march with the division to Les Cloyes. No. 12 Field Ambulance disembarked at Boulogne on the 24th August and reached St. Quentin at 4 a.m. on the 26th. It detrained there and marching with No. 10 Field Ambulance also joined the 4th Division on the 29th August. No. 11 Field Ambulance did not reach the division till the 2nd September. It disembarked at Boulogne on the 24th August, entrained the following afternoon and arrived at St. Quentin late at night, under orders for Busigny. It remained, however, on the train during the night of the 25th/26th, and in the morning was taken on to Rouen, where on the 28th August it was detrained. It remained in camp there till the 30th August, when it again entrained and was taken to Verberie. On

the 31st August it marched to Villeneuve-sur-Verberie and came in touch with the 4th Division the following day. It then took an active part in collecting and evacuating wounded of the Cavalry Division and Royal Horse Artillery during the fighting at Néry on the 1st September. About forty wounded were received by it and taken on in its ambulance wagons to Baron.*

The work of "B" and "C" Sections of No. 19 Field Ambulance during the retreat, culminating in the capture of their tent sub-divisions at Landrecies, has already been mentioned. "A" Section, the headquarters section of the unit, became attached to the 19th Infantry Brigade at Jenlain during the evening of the 24th August, but its commanding officer had no information regarding the remaining sections. "A" Section marched with the brigade. On arriving at Le Cateau at 10 p.m. on the 25th August, it opened in a school and transferred forty-three sick and wounded to supply column lorries at 4 a.m. on the 26th. It then went with the brigade to Reumont and formed a dressing station between that place and Maurois in rear of the position taken up by the brigade between Bertry and St. Benin. At noon the stampede already referred to occurred on the road and in the panic caused by it all first line transport together with the ambulance wagons went back in confusion towards Maretz. All except two of the ambulance wagons, which got lost in the traffic, were stopped by two of the officers, Captain Browne and Lieutenant R. A. Preston, about a mile from Maretz, and parked in a field by the side of the road in charge of the quartermaster ; while the bearers and the two officers returned with two of the wagons to Reumont and collected wounded under heavy shrapnel fire. The wounded were taken to the church at Reumont, and when the village was shelled in the afternoon the two officers sent back the ambulance wagons towards Maretz with as many as they

* Altogether the field ambulances of the 4th Division collected about 160 sick and wounded at Baron, and on retiring on the night of 1st/2nd September 120 serious cases were left in a château there in charge of a medical officer, Lieutenant Warrington, and 20 men of "A" Section, No. 12 Field Ambulance. Orders had been given for the wounded to be evacuated by the supply column lorries from the château at 11.30 p.m., but the lorries did not arrive. Apparently they were withdrawn from the place where they had been parked without carrying out the instructions. About 70 slightly wounded and foot-sore men got away with the field ambulance, but Lieutenant Warrington and his detachment were captured with the rest of the wounded. He was left in charge of them in the château by the enemy, and was eventually set free when the French advance took place about a week later. Lieutenant Warrington reported that at first he was well treated, but afterwards he had to contend with much hostile treatment on the part of the Germans.

could hold, and all who could walk. Major Brunskill, the D.A.D.M.S. of the 5th Division, was in Reumont, and, as already noted, he remained there until captured. Captain Browne and Lieutenant Preston also remained with the wounded, but eventually retired and caught up the two ambulance wagons, going on with them to St. Quentin, in a state of complete exhaustion after forty-eight hours of practically continuous work. As they failed to get in touch with the rest of the section, and the horses were unfit to proceed further, Captain Browne's party, which consisted of himself, Lieutenant Preston, thirteen of the R.A.M.C., three A.S.C. and two ambulance wagons, were placed on a train and taken to Ribecourt on the 27th, and from there by rail on the 29th to Beauvais and Compiègne, where they arrived at 8 p.m. There they received orders from the D.D.M.S., G.H.Q., to go on in the train to Crepy-en-Valois, and await the arrival of the 4th Division, to which the 19th Brigade had now been attached.

No. 20 Field Ambulance, which arrived at Le Cateau on the 22nd August, was employed during the 23rd and 24th August in receiving sick and transferring them to Amiens, and also in sending assistance to those collected at Landrecies and Bavai. On the 25th the unit marched by Busigny and Bohain to St. Quentin, where it took charge of an aid post at the railway station from No. 5 Stationary Hospital. It then marched to Noyon on the 27th, where it again acted as an aid post at the railway station. About 100 sick and wounded were attended to there, and the aid post was handed over on the 28th to French Red Cross personnel. On the 29th the unit marched to Compiègne and opened a dressing station in a camp in the grounds of the horse show. The medical charge of this camp, which was found in a most insanitary condition, was now transferred to the tent division of No. 7 Field Ambulance, which, it will be remembered, had been moving by rail from Fresnoy. From Compiègne No. 20 Field Ambulance went to Dammartin on the 31st August, and its movements afterwards conformed with those of G.H.Q.

Casualties during the Retreat.

During the retreat the sickness amongst the troops was never serious, but large numbers fell out from exhaustion and blistered feet, especially during the hot weather of the last four days of August. The records of wounded are very incomplete. Some of the field ambulances failed to record

admissions, while the records of others were lost. The approximate number of casualties from the 22nd to 28th August is, however, estimated at 471 officers and 13,938 other ranks, of whom 88 officers and 1,073 other ranks were reported killed, 15 officers and 204 other ranks as having died of wounds, and 147 officers and 3,115 other ranks as wounded ; 219 officers and 9,546 other ranks were reported as missing. Scarcely one-third of the number of wounded was recorded in the books of the field ambulances. Large numbers of walking wounded straggled down the road till they were taken over by evacuating units and were probably never seen by the field ambulances.

On the 3rd September the casualties amongst the R.A.M.C. requiring replacements were reported to be :—

14	officers and	210	other	ranks	from	Ist Corps.
16	,, ,,	288	,,	,,	,,	IInd Corps.
4	,, ,,	92	,,	,,	,,	IIIrd Corps.
Total 34	officers.	590	other	ranks.		

The missing at Le Cateau formed the bulk of the recorded casualties. At Landrecies the number recorded is 4 officers and 25 other ranks killed, 8 officers and 117 other ranks wounded, and 21 officers and 572 other ranks missing. At Villers Cotterets on the 1st September the casualties were 3 officers and 18 other ranks killed, 16 officers and 194 other ranks wounded, and 263 other ranks missing. There is no separate record of the number of wounded in the rearguard actions elsewhere or at Mons.

CHAPTER XI.

THE LINES OF COMMUNICATION DURING THE RETREAT.

IN the preceding chapters the movements and work of the field medical units have been described in more detail than may appear necessary. It has been thought advisable, however, to do so, because from the period of concentration to the end of the retreat the field medical organization of the British Army was put to the test of modern warfare for the first time, and in circumstances of peculiar difficulty. Immediate evacuation to the lines of communication, or the alternative of abandoning the sick and wounded to the enemy, were the only solutions of the medical problems which presented themselves. There was no possibility of treating sick and wounded in medical units that were constantly on the march. Many had of necessity to be left in the local civil, military and auxiliary hospitals of the towns and villages between Mons and Le Cateau and elsewhere along the line of the retreat; but it was contrary to British tradition and instincts to do so. Consequently, although under the Geneva Convention it was best to leave the dangerously wounded behind—and it must be remembered that medical personnel was left with them—large numbers were carried back with the retiring columns or straggled back by themselves. Their evacuation then became more or less haphazard.

The Evacuation of the Casualties.

St. Quentin had been the principal point to which the evacuation of the sick and wounded was directed, but it was abandoned on the 27th August. Afterwards, although an effort was made, as may be gathered from the account of No. 20 and No. 7 Field Ambulances, to form aid posts at certain railway stations, no regular system of medical posts, where the retreating field ambulances could be relieved of their loads could be arranged along the lines of retreat. The columns retired in a direction at right angles to the organized lines of communication of the British Force, so that they were not falling back on medical units of the evacuating zone, but were marching away from them.

The whole system of the lines of communication had also been disturbed by the sudden change of bases from the Channel

to the Atlantic. Railheads were constantly changing and ambulance trains only beginning to run. Refilling points practically ceased to exist, as supplies were left in dumps by the side of the road for the retiring troops to pick up, so that the scheme of sending wounded to them methodically and there transferring them to motor lorries of supply columns broke down. In the confusion and congestion of the traffic A.Ds.M.S. of divisions frequently lost touch with their field ambulances; sections or detachments of field ambulances got separated from their formations or from one another, and the D.M.S. of the Force was not well informed as to the progress of events. His D.D.M.S. on the lines of communication at Amiens at any rate records on the 25th August that "rumours of all kinds are afloat and a visit to headquarters and the D.M.S. has not elicited much information." There is a "good deal of confusion in most departments and definite information hard to obtain." The D.D.M.S. at G.H.Q., who had just been thrown, as it were, into an administrative position there, was only beginning to grasp the situation, and one of the two corps of the field army had no D.D.M.S. with whom he could communicate. "Clearing hospitals and ambulance trains were being worked from the office of the D.M.S., which, owing to the sudden change of bases, was very busy with L. of C. organization and quite out of touch with G.H.Q." Orders of a precise nature consequently could not be issued or failed to reach their destination in time. In these circumstances preparations for methodical evacuation during the retreat were not possible and the field ambulances seized whatever opportunities presented themselves for transferring to empty supply lorries, other vehicles or trains, the sick and wounded whom they were able to carry with them, while they left in the French hospitals of the towns through which they passed those for whom they had no room.

In all these respects the retreat of the autumn of 1914 differed essentially from that of the spring of 1918. In one respect only could conditions be regarded as more favourable. The towns and villages through which the field ambulances marched were still intact and contained supplies and resources which were freely given by the inhabitants and proved of infinite value to the medical units and the casualties in them.

The want of motor ambulance transport during this period has been the subject of much criticism; but it is doubtful if the presence of motor ambulance cars would have made much difference during the retreat owing to the impossibility

of motor transport making its way forward to the positions and rearguards where casualties were occurring through the retreating columns of transport, or of getting back through them with wounded, had they been able to do so.* It was inevitable, no matter what was the nature of the ambulance transport, that a large number of the wounded should have been left behind. Wounded able to walk straggled back by themselves and were picked up as they went along by field ambulances and transport of all kinds, but the best that could be done for the more seriously wounded was to leave them in the charge of the local French hospitals and of the R.A.M.C. personnel left with them.

All these circumstances presented peculiar obstacles in the way of methodical collection and evacuation of sick and wounded along the line of retreat. On the lines of communication and at the bases the medical services had to contend with similar difficulties.

Between the 24th August and 5th September the positions of railheads from day to day, and the formations with which they were in touch, were as follows :—

August 24th	..	Busigny (G.H.Q.). Aulnoye (Cavalry Division and Ist Corps). Solesmes (IInd Corps).
August 25th	..	Busigny (G.H.Q. and 4th Division). Vaux Andigny (Cavalry Division and 19th Brigade). Etreux (5th Cavalry Brigade and Ist Corps). Wassigny (IInd Corps).
August 26th	..	St. Quentin (G.H.Q., 4th Division, 5th Cavalry Brigade, Ist and IInd Corps). Peronne (Cavalry Division, 19th Brigade).
August 27th	..	St. Quentin (whole force).
August 28th	..	Noyon (G.H.Q., IInd Corps, L. of C.). Chauny (Cavalry Division, Ist Corps).
August 29th	..	Compiègne (G.H.Q., IInd Corps, L. of C.). Lamotte Breuil (Cavalry Division, 5th Cavalry Brigade). Attichy (Ist Corps).
August 30th	..	Compiègne (G.H.Q., IInd Corps, L. of C.). Jaulzy (Cavalry Division, 5th Cavalry Brigade, Ist Corps).

* A similar difficulty with regard to motor ambulance transport was subsequently called attention to by Colonel Sir A. Lee, who had been sent to France to report to Lord Kitchener on the working of the medical services. In describing the medical situation during the First Battle of Ypres, when roads and railways were congested by traffic, he makes a special note of the impracticability of using motor ambulance transport in such circumstances. During the retreat from Mons motor ambulance convoys could no doubt have got away by routes at right angles to the retreat, towards Amiens, but this would not have solved the difficulty of their reaching the field medical units and would have involved their crossing the already congested line of retreat.

August 31st	..	Senlis (G.H.Q., Cavalry Division, 4th Division, 19th Brigade, L. of C.).
		Le Plessis Belleville (5th Cavalry Brigade, Ist and IInd Corps).
September 2nd	..	Le Bourget (G.H.Q., Cavalry Division, IIIrd Corps, L. of C.).
		Nutry (5th Cavalry Brigade, Ist and IInd Corps).
September 3rd	..	Tournay (G.H.Q., Cavalry Division, IIIrd Corps, L. of C.).
		Marles (5th Cavalry Brigade, Ist and IInd Corps).

The supply columns of the formations, instead of bringing up supplies from the railheads to definite refilling points, as already noted, dumped their loads of beef, bacon, cheese and biscuits along the line of retreat, and the troops helped themselves as they passed. There were, therefore, no fixed points at which the empty lorries could wait the arrival of the ambulance transport with sick and wounded, so that the normal system of evacuation was no longer possible.

The Clearing Hospitals.

The essential links between the field army and the lines of communication, that is to say between the collecting and the evacuating zones, were suddenly and unexpectedly broken by the withdrawal of the clearing hospitals from St. Quentin to the sea bases just as arrangements were being made for commencing evacuation through them on methodical lines. No. 3 Clearing Hospital had arrived at St. Quentin on the 24th August, so that on that day all six clearing hospitals were there. They were ordered then by the D.M.S. to store their heavy equipment and be ready to move into the field, and at five o'clock in the afternoon four of them (Nos. 1, 2, 4 and 5) entrained as a group under the command of Lieut.-Colonel Morgan, leaving No. 3 and No. 6 at St. Quentin. Six of the R.A.M.C. personnel under a N.C.O. had already been detailed from each of the clearing hospitals to form a medical personnel with the supply columns.

The four grouped units arrived at Aulnoye at midnight of the 24th. No. 2 Ambulance Train was waiting there, but there were no wounded and, as no orders were received, the clearing hospitals remained on the trucks till after mid-day on the 25th August. Wounded had begun by this time to come into Aulnoye, and the clearing hospitals were employed in transferring them to the ambulance train ; but, as it was unsafe to remain at Aulnoye, their trucks moved off and got back to St. Quentin at 4 p.m., when the detachments sent to the supply columns also returned. On the 26th the group of four clearing hospitals received no orders at St. Quentin and

remained there until the evening, when they again entrained, on the same train as before, with instructions to proceed to Amiens. The train arrived at Amiens by way of Noyon, and the clearing hospitals without detraining were then sent on to Rouen, where they arrived at 9 p.m. on the 27th August. On the following day they opened a large rest station in the goods shed at Rouen, where they fed numerous sick and wounded who were arriving at Rouen by train, and conveyed them by tram cars, ambulance wagons and motor transport to No. 3 and No. 5 General Hospitals, which were now open.

No. 3 and No. 6 Clearing Hospitals remained at St. Quentin till the 27th August. After opening a dressing station at the railway station they were ordered on the night of the 26th August to open as a hospital at the Lycée St. Martin, which had previously been occupied by G.H.Q. A number of wounded was received, fed and dressed there until 9 a.m. on the 27th August, when verbal orders were received from General Sir H. Smith-Dorrien to entrain at once. Apparently, with much difficulty and by seizing all kinds of transport, the wounded in the Lycée were put on a goods train along with the clearing hospitals, No. 6 forming a rest station at the station while the train was being made ready. Many more wounded were then coming in to St. Quentin and were also put on board the train. The train left St. Quentin at 11 a.m. on the 27th August, and went by way of Terguier, Noyon, Compiègne, Amiens and Beauvais to Rouen, where it arrived at 9 a.m. on the 28th August. The stores and equipment of No. 3 Clearing Hospital were on trucks attached to the train and were of much use during the journey, but the trucks on which the heavy equipment of No. 6 had been stored were left behind, and, as the train was short and no transport available, its stretchers and medical stores had to be abandoned in the Lycée. The eight riding horses of No. 3 were marched to Terguier and entrained there with French cavalry for Amiens, and eventually reached Rouen. Those of No. 6 were left in St. Quentin. The improvised ambulance train appears to have taken about 600 sick and wounded from St. Quentin to Rouen. Sixteen serious cases were transferred at Compiègne, and four at Beauvais, to local French hospitals during the journey.*

* The diary of No. 6 Clearing Hospital states that about 1,500 sick and wounded had passed through St. Quentin up to the time of its departure, and that it entrained, amongst others, some eighty wounded who had been placed in the French hospital at St. Quentin.

All the clearing hospitals were thus at Rouen on the 28th August. Their subsequent employment during the period of retreat was at the bases, after providing detachments on supply trains and rest station parties along the line of railway. They assisted the general hospitals to load and unload their equipment during their transfer from Rouen to St. Nazaire, and afterwards formed hospitals or rest stations at Le Mans and Nantes. No. 1 Clearing Hospital went by train to Le Mans on the 1st September, after detaching on the 29th and 30th August, by order of the D.M.S., three officers and twenty-two other ranks with light equipment to open a rest station at Creil, which had become the regulating station for the time being. No. 3 Clearing Hospital also entrained at Rouen for Le Mans, and arrived there on the morning of September 1st. At Le Mans No. 1 opened a hospital at the Archbishop's Palace, an empty building abandoned when the Religious Associations were expelled from France. No. 3 became a dressing station on the railway platform, and detailed two parties of one medical officer and seven other ranks with equipment to accompany supply trains to railhead. Four nursing sisters were detailed for duty at this dressing station. The work was chiefly feeding and dressing sick and wounded in trains passing through Le Mans on their way to St. Nazaire ; and transferring to a rest camp the slighter cases, amongst whom there was a large number of sick and footsore men, and to No. 1 Clearing Hospital at the Archbishop's Palace the more serious cases unfit for further transport.

Nos. 2, 4, 5 and 6 Clearing Hospitals left Rouen for St. Nazaire on the 31st August by sea and eventually arrived at Nantes. They were employed in assisting the general hospitals.

It will thus be seen that the clearing hospitals of the original Expeditionary Force had little opportunity of exercising the functions for which they had been organized. This was the first time that the units had been employed in war, and the only comment upon them at this stage was that certain of their equipment could not be profitably employed on account of the unwieldiness of the stores. This was the view expressed of them in the diary of the D.M.S., and accounts for his ordering the clearing hospitals to discard their heavy equipment and be ready to move with light equipment only. The original weight of a clearing hospital was only twenty-one tons, requiring for its transport by road seventeen general service wagons or eight 3-ton motor lorries. In later stages of the war the

weight was enormously increased, and frequently amounted to 200 tons and more. The chief dead weight originally was in the tentage, stretchers and other ordnance equipment, the medical equipment weighing only one ton of the total of twenty-one. Many of the stretchers were handed over to the ambulance trains, under the instructions to which reference has already been made. The tentage was discarded because at this period of the campaign suitable buildings were available. The comment, therefore, on the unwieldiness of the clearing hospital equipment on the occasion on which they were first used in the field is of some historical interest, when, as happened later, not only were large increases made in the tentage, stretchers, and medical equipment, but bedsteads and huts were also added.

The Ambulance Trains.

The employment of the six ambulance trains of the Expeditionary Force during the period of the retreat was almost as limited as that of the clearing hospitals. No. 1 and No. 2, as noted in the previous chapter, were sent to Aulnoye on the 24th August at the urgent request of the A.D.M.S. of the 2nd Division, who was clearing the wounded at Bavai to the railway there. This was their first trip. No. 1 had only entrained about thirty sick and wounded at Aulnoye before it was sent off at noon on the 25th August without warning by the French railway staff, leaving three of its personnel behind. It went back to Amiens and transferred the patients to No. 7 General Hospital. No. 2 Train was able to entrain 393 sick and wounded before leaving Aulnoye, although it did so with much difficulty, owing to the crowds of refugees who poured into the railway station and boarded the train. Seventy-five stretchers were obtained from No. 5 Clearing Hospital to make up its deficiency in stretchers, and the train left Aulnoye at 1 o'clock in the afternoon of the 25th August. It picked up twenty-five more wounded from the civil hospital at Landrecies and several more from ordinary passenger trains, which were returning from Mons and Maubeuge. It went on from Landrecies to Busigny, where trucks containing No. 7 Stationary Hospital, which had been sent forward from St. Quentin to Aulnoye, as noted further on, were attached to it, and more wounded were taken on board from other trains.

No. 2 Ambulance Train had now a load of some 30 officers and 440 other ranks. After several long halts during the night to enable the sick and wounded to be fed and dressed, the train

arrived in Amiens early in the morning of the 26th August. Seventeen serious cases were transferred to No. 7 General Hospital and the train then went on to Rouen, where it arrived in the evening and transferred the rest of the sick and wounded to No. 5 General Hospital. As this was the first journey from front to base of a fully loaded ambulance train, organized in accordance with the mobilization scheme, it is of interest to note that the diary of its commanding officer records at the end of the journey that the Brechôt apparatus was excellent, and that, although lack of communication between the wagons and of cooking facilities was much felt and the appearance of the train excited many adverse comments, "it had good points."

No. 1 Ambulance Train subsequently made three and No. 2 two more journeys to railheads during the period of the retreat. No. 1 went to St. Quentin on the 26th August and entrained 270 sick and wounded by the morning of the 27th, when it left for Rouen. At Rouen it detrained 22 seriously wounded in the evening and took the rest to Havre, arriving there just after midnight. It left Havre on the afternoon of the 28th August and reached Creil at 6.30 a.m. on the 29th. It remained there until 2 a.m. of the 30th, when it went to Attichy and entrained 291 sick and 9 wounded. It then went to Soissons, but after waiting for sick and wounded, who did not arrive, it returned through Vic-sur-Aisne, where it entrained 24 wounded, and reached Rouen at 5.30 p.m. that day, and Havre at 2 a.m. of the 31st, with 312 sick, 44 wounded, 80 stragglers and 16 German prisoners. It then went to Le Bourget, a suburb on the north-east of Paris, which became a railhead on the 2nd September, arriving during the night of the 1st/2nd September. During the 2nd September many patients, mostly sick and stragglers, arrived by motor transport and were taken on board. On the 3rd September more stragglers who had lost their units and were footsore were entrained, and the train left after mid-day with 88 sick, 57 stragglers and 6 wounded. It went to Le Mans through St. Cyr, where, without reference to the commanding officer, several French reservists were put on the train during the night. The train reached Le Mans at 10.30 a.m. on the 4th September and, after detraining all except 16 sick and 3 wounded, went on to Nantes, where it arrived after midnight of the 4th/5th September.

The second journey of No. 2 Ambulance Train was to Noyon, through Compiègne. It left Rouen on the afternoon of the

27th August without warning and arrived at Creil at night. It stayed there till mid-day of the 28th and reached Noyon at 5.30 p.m., when it took on board 130 sick and wounded. It then withdrew for safety to Compiègne, but returned to Noyon at 5 a.m. on the 29th August and collected 30 more sick and wounded from motor lorries. It left at 8 a.m. and went to Havre, where it arrived at 3.30 a.m. of the 30th by way of Compiègne, Creil and Rouen, carrying 136 sick and wounded, who were transferred to the Hospital Ship "Asturias." No. 2 Ambulance Train then went to Le Bourget on the 1st September and left at noon on the 2nd September. It was held up for 24 hours at Alençon in a long line of trains and did not reach Le Mans till 2 a.m. on the 4th September. It then went on to St. Nazaire, where it arrived at 6 p.m. The train stopped at every station and people crowded round it with food, wine and beer, from the effects of which many of the patients and orderlies suffered, so much so that eventually guards had to be put on the platforms as a preventive measure. The stationmasters were warned in advance to keep the stations clear on the arrival of the train. At St. Nazaire the sick and wounded from No. 2 Ambulance Train (7 officers and 150 other ranks) were embarked direct on a transport* leaving for England, as no hospital units had yet arrived there.

The history of the organization of the remaining ambulance trains during the period of the retreat is somewhat confused. Major G. A. Moore, who had mobilized at Aldershot in command of one of the detachments, was appointed Director of Ambulance Trains at Amiens for the purpose of preparing the trains. Major Burke, who commanded No. 3 Detachment, was in Paris collecting articles of equipment when the retreat commenced. In his absence No. 3 Ambulance Train was hurriedly organized under the command of Major Waring, who was in charge of No. 4 Ambulance Train Detachment; while Major Beatty, of No. 5 Detachment, took command of No. 4 in addition to his own. No. 6 Detachment was then apparently left in charge of Major Moore. No. 3 Ambulance Train was composed of 40 wagons, including two 1st and 2nd class coaches for the personnel, four wagons for packstore, equipment, kitchen and baggage, and 34 for sick and wounded, each capable of carrying 8 lying or 20 sitting. It left Amiens at 2 p.m. on the 25th August and reached St. Quentin the same evening. It

* The "Southern Cross." It took 4 officers and 131 other ranks, all of whom except 29 were sick, to Newhaven. Two medical officers, 12 nursing sisters, and 9 R.A.M.C. orderlies were sent in charge of them.

left St. Quentin at 6.30 a.m. on the 26th August and arriving at Busigny an hour afterwards found the station there being closed. After entraining 12 sick and wounded it waited at Busigny till 11 a.m., when, as no ambulance transport appeared to be coming to the town, it left for St. Quentin, entrained 74 sick there and left again in the evening for Amiens. It arrived at Amiens at 1 a.m. on the 27th, entrained 101 sick and wounded and went to Rouen, where it arrived at 9.30 a.m. and transferred its sick and wounded to No. 5 General Hospital.

No. 3 Ambulance Train made two more journeys to railheads during the retreat, the first to Noyon and Compiègne, where several sick and wounded were taken over on the 28th and 29th August, some from an ordinary passenger train and from French hospitals. It returned to Rouen in the forenoon of the 30th and went the same afternoon to Havre, where it detrained 208 British and 40 French sick and wounded in the evening.

The last journey of No. 3 Ambulance Train to railhead during the retreat was under the command of Major Burke, who had rejoined it at Havre on the 31st August.* It went to Le Bourget through Creil on the afternoon of the 1st September, and at 2 a.m. on the 2nd September left for Le Plessis Belleville railhead. Major Burke had been warned at Dammartin that it was unsafe to proceed as far as Le Plessis Belleville, but he had insisted on doing so, and arrived at 5 a.m. He found that the field ambulances were then entering the railway station and the British troops retiring. He took over the sick and wounded from the ambulances, and waited until all the troops had passed. He then returned to Le Bourget, arriving at 10.30 a.m. on the same day, and transferred his load of sick and wounded to No. 2 Ambulance Train. On the 3rd September No. 3 Ambulance Train was ordered to Villeneuve St. Georges, where the ambulance train depôt was now established.

The detachments for No. 4 and No. 5 Ambulance Trains left Amiens for Rouen on the 27th August with the ambulance train depôt, and were there amalgamated as one train. They went to Rouen on a train which was being made up at Amiens as No. 4 Ambulance Train, under the command of Major Beatty. It consisted of 26 wagons, of which 23 were 3rd class passenger coaches. Twenty of the latter had been prepared for sick and

* Major Burke returned to Amiens from Paris with the equipment which he had purchased there, loaded on trucks, to find that Amiens and the ambulance train depôt had been abandoned. He managed with considerable difficulty to bring his trucks to Rouen, where they were handed over to Major Moore, who was then organizing No. 4 and No. 5 Ambulance Trains.

wounded by the removal of some of the seats, so as to permit of the Brechôt apparatus being placed in them for stretcher cases. In this way each carriage took 6 lying down and 18 sitting, or a total of 120 lying and 360 sitting in all. The train was manned at Rouen by both No. 4 and No. 5 Detachments, and made its first journey on the 30th August to Attichy railhead, where it arrived at 6.15 p.m. It found the station deserted and no signs of sick and wounded. It then returned to Compiègne, where 30 patients were entrained during the night of the 31st August and from there went to Havre, arriving at 9 a.m. on September 1st. During the journey to the base, 24 wounded were placed on the train at Creil, and 17 at Rouen. Major Waring now returned to No. 4 Ambulance Train and took command after handing over No. 3 Train to Major Burke, but Major Beatty remained with him in command of No. 5 Detachment. The amalgamated train went from Havre to Le Bourget on the 2nd September, and from there to the ambulance train depôt at Villeneuve St. Georges, apparently without entraining sick and wounded.

The history of No. 6 Ambulance Train Detachment is somewhat obscure, but, when Amiens was abandoned, Major Moore went with it to Rouen, where he joined forces with a French ambulance train on the 30th August, and proceeded with it on the 31st August to Creil. This train became known as the "Franco-British" train, which left Creil on the 1st September for Le Bourget and on the 5th for Noisy-le-Sec and Verneuil l'Étang, where it entrained sick and wounded from various field ambulances and took them to Nantes on the 7th September. This "Franco-British" train, therefore, was scarcely available for work during the retreat, and the total number of journeys of ambulance trains to railheads and back during that period may be regarded as ten, namely, four by No. 1, three by No. 2, two by No. 3, and one by the amalgamated Nos. 4 and 5.

The General and Stationary Hospitals.

The history of the stationary and general hospitals and the other medical units on the lines of communication during the retreat is that of a sudden and unexpected change from the Channel ports to the Atlantic. The hospitals had been making immense efforts to open for work when the decision to form a new line of communication with the field army was made. Surg.-General Woodhouse, in writing to the Director-General at the War Office on the 9th September, describes

the change as "a terrible blow" to the medical services, "inflicting stupendous work on the units which were already established." "Our position when the change was suddenly ordered," he writes, "was most excellent," and all the medical units "in a most efficient condition."

At St. Quentin No. 5 and No. 7 Stationary Hospitals had been opened for the reception and retention of slight cases of sickness and wounds and of those unfit for further transport. At Amiens No. 7 General Hospital, with a section for officers in a separate building, was in full working order; and Nos. 1, 3 and 10 Stationary Hospitals and the three advanced depôts of medical stores were preparing for work. Seven general hospitals had reached Rouen. Nos. 3, 5 and 12 were open, No. 6 was opening, and Nos. 4, 9 and 11 were preparing their sites. A base depôt of medical stores and a convalescent depôt were also open. At Havre Nos. 1 and 2 General Hospitals were open and had been expanded by the amalgamation of No. 8 with them. No. 9 Stationary Hospital, a convalescent depôt and a base depôt of medical stores were also open. No. 10 General Hospital and a base depôt of medical stores were in reserve. At Boulogne No. 2 Stationary Hospital was expanding to accommodate 500.

Orders to withdraw all medical units from St. Quentin and Amiens were issued on the 26th August. But previous to this No. 7 Stationary Hospital was sent by the R.T.O., St. Quentin, forward in trucks in the early morning of the 25th August to Aulnoye.* The officer commanding finding the position there untenable, ordered the trucks back on his own initiative about 1 p.m. and reported his arrival at Busigny, where he left a detachment of one officer and six men to act as a loading party and assist in evacuating sick and wounded, and then had his trucks attached to No. 2 Ambulance Train, arriving eventually at Havre. The detachment left at Busigny rejoined the unit at Havre on the 28th August, having got away on No. 3 Ambulance Train on the 26th of the month.

Rouen now became the advanced base, and the medical units from St. Quentin and Amiens went there, but the equipment of No. 7 General Hospital† and of the advanced depôts of medical stores had to be left behind. Boulogne was abandoned as a base on the 26th August, No. 2 Stationary Hospital being

* No. 7 Stationary Hospital had apparently been sent forward in accordance with the policy referred to on p. 178.

† This equipment was left in charge of the Mother Superior of the convent where the hospital had opened, and was recovered intact when a British casualty clearing hospital was opened in Amiens, in August 1915.

transferred by sea to Havre. St. Nazaire was suggested as the principal sea base on the 28th August, and this was definitely approved on the 1st September.

The D.M.S. was able to move by rail to the new line one general, one stationary and two clearing hospitals*, but all the others had to be packed up and sent round by sea, a five days' journey. "Imagine our plight," writes Surg.-General Woodhouse. "No preliminary reconnaissance of the new bases was possible. Sick and wounded continued to arrive. One general hospital was hurriedly established at Nantes and the stationary and two clearing hospitals at Le Mans. On this new line we have the greatest difficulty in finding sites for our units, as it is one of the principal lines of evacuation of the French sick and wounded."

No. 9 General Hospital left Rouen by rail for St. Nazaire on the 30th August, but was ordered to detrain at Nantes, where it arrived early in the morning of the 1st September. It opened in the Parc des Sports there on the 3rd and commenced to receive wounded on the 4th September. No. 5 Stationary Hospital left on the 31st August and reached Le Mans on the 1st September. On the following day it opened in the Ancien Evêché and received wounded the same day. The movement of No. 1 and No. 3 Clearing Hospitals to Le Mans has already been described.

None of the other hospital units had opened in the new bases by the 5th September, but all of them, except No. 2 Stationary and No. 7 General Hospitals, which were still at sea, had arrived at St. Nazaire, although many of them had not then disembarked. They had all been ordered to close and pack up at Rouen and Havre on the 30th August, with the exception of No. 2 General Hospital at the *gare maritime*, which was kept open till the last moment for embarking sick and wounded and continued to receive patients till the 2nd September.

The Hospital Ships.

The three hospital ships of the mobilization scheme, "St. Andrew," "St. Patrick" and "St. David," arrived at Havre on the 24th August, the two former going on to Rouen. Surg.-General Woodhouse had already asked for more hospital ships, as he anticipated serious difficulties in keeping his bases clear with only these three small cross-channel boats.

* No. 9 General Hospital, No. 5 Stationary Hospital, and Nos. 1 and 3 Clearing Hospitals.

Consequently the "Asturias," the first of the large ocean-going hospital ships, was sent to Havre and arrived on the 29th August.* This was a fortunate occurrence, in view of the necessity of clearing all the patients from the hospitals at Rouen and Havre before their transfer to St. Nazaire. The first voyage was made by the "St. Andrew," which sailed from Rouen with 63 cot cases and 147 others on the 26th August.† Altogether, the four hospital ships cleared 3,387 sick and wounded from Rouen and Havre to Southampton between the 26th August and 3rd September. During that time the "St. Andrew" made three voyages and the "St. Patrick," "St. David" and "Asturias" two. The "St. David," however, remained at Havre till the last of the ships with hospital units had left. It went to Southampton with 22 patients on the 6th September. The sailings of the hospital ships from the Channel ports for the time being then ceased.

The Atlantic Lines of Communication and Bases.

It will thus be seen that the medical situation on the lines of communication at the end of the retreat found Amiens, Boulogne, Rouen and Havre clear of their medical units and of their sick and wounded and a new line of evacuation established between railheads and the Atlantic, with Villeneuve St. Georges as the regulating station, Le Mans as the advanced base, and Nantes and St. Nazaire as sea bases. Angers was also being reconnoitred as a hospital base.

The office of the D.M.S. was transferred from Amiens to Rouen on the 27th August, and went to Le Mans on the 1st September. The office of the D.D.M.S., L. of C., returned to Havre on the 25th August, and went by sea on the 4th September to St. Nazaire after arrangements had been made with the French military authorities to receive any sick or wounded who might arrive in Havre after the departure of the British medical units.

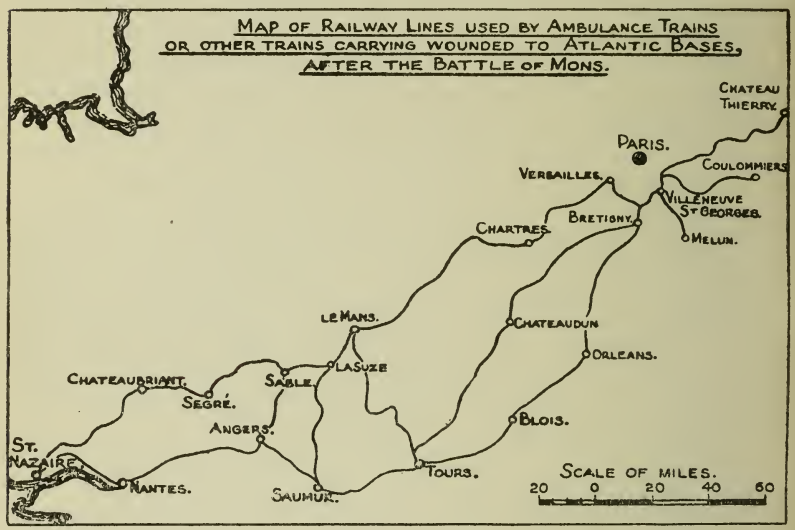
Colonel Lynden-Bell, from the Boulogne base, became A.D.M.S. of the St. Nazaire base,‡ and Colonel Westcott,

* The D.M.S. was informed on the 3rd September that the "Kenilworth Castle" and "Carisbrooke Castle" were also being taken up and fitted out as hospital ships.

† Previous to the sailing of the "St. Andrew," on the 26th August, 204 sick had crossed to Southampton in three transports, and were transferred to the Royal Victoria Hospital, Netley.

‡ Lieut.-Colonel Shanahan was appointed as his D.A.D.M.S. from the office of the D.M.S. on the 4th September, his place being taken by Major Fell, who had been attached to the office of the D.M.S. since the 24th August.

from Rouen, A.D.M.S. of the base at Nantes. Colonel C. C. Reilly, who had been A.D.M.S. of the Havre base, was transferred to the 3rd Division on the 6th September, replacing Colonel F. W. C. Jones, who had come down to the base sick but was eventually appointed to organize the medical services of a new base at Marseilles in anticipation of the arrival of a contingent from India. Major Webb continued to exercise the functions of a D.A.D.M.S., Railheads. His sanitary squads did much useful work not only as regards the sanitation of the railway stations, but also as station aid posts for the reception and entraining of sick and wounded. The two



sanitary sections went to St. Nazaire and were distributed for work at the docks and at the large camps which were being formed at that base. The sanitary squads from Rouen and Amiens went to Nantes and Le Mans. The base depôts of medical stores went to St. Nazaire, and the advanced depôts to Le Mans.

Voluntary Aid.

During the period of the retreat the resources of voluntary aid were just beginning to be felt, but were scarcely in a position to give assistance to any great extent. A small party of five men, under Dr. Beavis, had been sent to Boulogne by the British Red Cross Society, as a rest station party. They arrived at Boulogne on the 26th August to find the base being

closed and asked for instructions. Surg.-General Woodhouse, after consultation with Sir Alfred Keogh, gave orders for them to return to England. They went to Havre and returned to Southampton from there. Two voluntary hospitals, the Duchess of Westminster's and an Australian voluntary hospital, the Countess of Dudley's, had been organized as stationary hospitals by committees in England, and the War Office had asked on the 25th August whether they could proceed overseas. Surg.-General Woodhouse was unable to find a place for them and telegraphed to say that they should be retained in England. The Australian Voluntary Hospital, however, under Colonel Eames, managed to arrived at Havre on the 29th August, and was eventually transferred with other hospital units to St. Nazaire. But considerable help was received from the Chief Commissioner of the Red Cross Society in providing comforts and equipment for officers' hospitals, which were being established at Amiens and Rouen ; and a party of surgeons, ten dressers and twenty nurses* was accepted on the 30th August for employment in a private hospital in France. Owing to the difficulty in determining the usefulness or otherwise of personnel of voluntary organizations desirous of proceeding to France at this time, the D.M.S. of the Force was requested on the 27th August to telegraph to the War Office details of personnel whose services he could utilize and the locality where it was proposed to employ them. On the 28th August he was informed by the War Office that a château, near Compiègne, was placed at his disposal by Mrs. Depew as a voluntary hospital, with surgeons and nursing sisters, but, owing to the advance of the enemy, advantage could not be taken of this.

It was felt that the most useful assistance which could be given to the medical services by the Chief Commissioner of the Red Cross Society was the establishment of Red Cross stores for the supply of comforts and other articles to the military hospitals. Consequently Sir Alfred Keogh was asked by the D.M.S. on the 4th September to open a depôt for this purpose at Nantes, and also to appoint a representative to be with him at the advanced base. Red Cross Stores subsequently developed into important voluntary units which rendered invaluable assistance to the hospitals on the lines of communication and army areas in France.

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* *See* Vol. I, Medical Services—General History, p. 213.

CHAPTER XII.

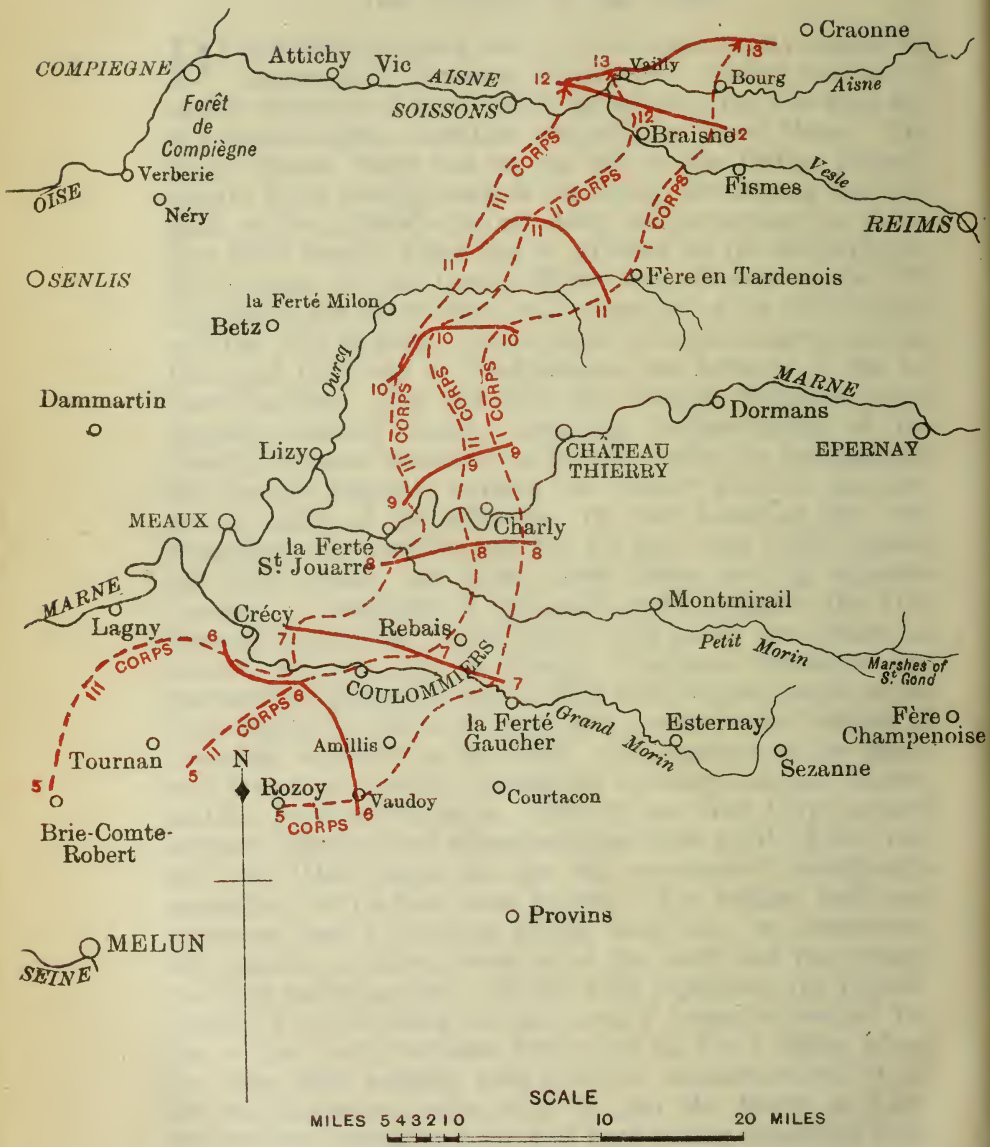
THE ADVANCE TO THE AISNE.

BY the 5th September 1914 a new situation, favourable for assuming the offensive, was created. Orders were issued on the afternoon of that day for an advance the following day in a north-easterly direction towards the Grand Morin. The Sixth French Army was on the left of the British Expeditionary Force moving towards the Ourcq, threatening the right flank of Von Klück's Second Army and upsetting his plans. The Fifth French Army was to advance on the British right. The passage of the Grand Morin was effected on the 7th September, the IIIrd Corps, still composed of the 4th Division and the 19th Brigade, crossing west of Coulommiers, and the IInd and Ist Corps at Coulommiers and between it and La Ferté-Gaucher. The 3rd and 5th Cavalry Brigades under Brigadier-General Gough, operating independently of the Cavalry Division, advanced on the left, while the 1st, 2nd and 4th Cavalry Brigades forming the Cavalry Division operated on the right of the advance. On the following day, 8th September, the cavalry and the Ist and IInd Corps crossed the Petit Morin, the IIIrd Corps being held up opposite Jouarre. A regiment of the 1st Cavalry Brigade, the 11th Hussars, pushed on to the Marne and seized the bridge at Noyent on the road to Charly. Stubborn resistance was encountered during the day at Orly and Boitron, north of the Petit Morin, by the IInd Corps, and a considerable number of casualties occurred on all fronts. The passage of the Marne was forced on the 9th September between Château Thierry and La Ferté-sous-Jouarre. The Ist and IInd Corps crossed without difficulty and advanced some miles north of the river but the IIIrd Corps on the left encountered considerable opposition at La-Ferté-sous-Jouarre. The bridges had been destroyed and a pontoon bridge could not be commenced till nightfall, so that the whole of the Corps had not crossed until the following day. On the 10th September the Expeditionary Force covered by the cavalry brigades reached the line of the Ourcq between Breny and La Ferté Milon, where the river after running west from the neighbourhood of La Fère-en-Tardenois bends south to join the Marne at Lizy. On the 9th September there had been strong opposition from

OPERATIONS, 6 - 13 SEPTEMBER, 1914.

Advance of B.E.F.

Positions at night are shown by dates.



Ordnance Survey, 1920.

the German rearguards at Méry Pisseloup and Bézu north of the Marne, and on the 10th September in the area around Hautevesnes, Courchamps and Gandelu. The IIIrd Corps had been advancing in the meantime on a line eastwards of the southern bend of the Ourcq and had not yet come into the line of the advance, the 3rd and 5th Cavalry Brigades filling the gap between it and the IInd Corps. The Ourcq was crossed on the 11th September by all three Corps, without opposition. On that day the 3rd and 5th Cavalry Brigades reached the Villemontoire-Droizy plateau south of Soissons, and the 1st, 2nd and 4th Cavalry Brigades Branges, Arcy and Loupeigne, south of Braisne, with their patrols in touch with the German cavalry on the line of the Aisne and Vesle.

On 12th September the battle of the Aisne commenced and ended officially on the 15th September; but fighting on the Aisne front continued throughout the remaining days of the month.

The weather was fine and warm on the 6th and 7th September but generally wet and cold on the remaining days of the advance, very heavy rain occurring on the 12th September as the Expeditionary Force approached the Aisne over the plateau south of the river.

Railheads during the advance were at Tournan and Marles up to the 8th September. On that day they moved to Chaumes, Coulommiers and Mortcerf; on the 10th they were at Coulommiers and Jouy and remained there until the 14th September, when they were established at Fère-en-Tardenois, Oulchy and Neuilly St. Front during the fighting on the Aisne.

General Headquarters moved from Melun to Coulommiers on the 9th September, and to Fère-en-Tardenois on the 12th September, where it remained until the Expeditionary Force moved to the Flanders front.

The country over which the advance took place was generally a great cultivated plateau intersected by the valleys of the Grand Morin, Petit Morin, Marne, Clignon and Ourcq, with occasional forest and woodland, especially in the area between the Marne and the Clignon. The river valleys are wide open valleys rising somewhat steeply to the intervening plateau. The three army corps advanced in a direction from south-west to north-east on a somewhat narrow front not more than ten or fifteen miles in width, passing over about sixty miles from the area occupied by them on the 5th September south of the forest of Crécy to the plateau overlooking the Aisne. There

were frequent halts during the advance. The distances covered daily were not excessive and as a rule the troops were able to rest during the night. The men were by this time well seasoned and hardened, and, with the exception of a considerable number of men who fell out from exhaustion and sore feet during the earlier days of the march in the IIIrd Corps formations, there was very little sickness. The marches were, however, specially trying to the horses of the field ambulances, which at times had to move over rough roads or across country.

The Medical Situation.

The field medical units were being brought up to strength by reinforcements from the base. Lieut.-Colonel B. Forde with six officers and the personnel of No. 6 Clearing Hospital, the equipment of which had been abandoned at St. Quentin on the 27th August, had been sent to the IIIrd Corps by Surg.-General Woodhouse to replace casualties, but, as will appear later, they remained together as a clearing hospital unit throughout.

No. 4 Field Ambulance consisted of its bearer division personnel under Major Faulkner, and the quartermaster, Lieutenant Jones, with the transport and baggage of the tent division, which had avoided capture at Landrecies on the 26th August. The unit was rapidly reformed by reinforcements and medical equipment from the base.

No. 19 Field Ambulance, which had lost its "B" and "C" Sections at Landrecies on the 26th August, was reformed at the beginning of the advance by transferring "B" and "C" Sections of No. 20 Field Ambulance to it; and from that time onwards No. 20 Field Ambulance, which remained constantly with G.H.Q., consisted of "A" Section only.

Colonel H. Thompson, the A.D.M.S. of the 2nd Division, who was captured at Prisches on the 26th August, was replaced by Lieut.-Colonel Dalton from No. 1 General Hospital on the 9th September. Colonel Reilly from the Havre base replaced Colonel F. W. C. Jones as A.D.M.S. of the 3rd Division on the 12th September; and Major J. F. Martin joined the 5th Division as D.A.D.M.S. on the 8th September in place of Major Brunskill, who had been left with wounded at Reumont, south of Le Cateau, on the 26th August.

Neither the Ist Corps nor the IIIrd Corps had an administrative medical officer on their headquarters staff during the advance.

Colonel O'Donnell remained at G.H.Q. as D.D.M.S., assisted by Major S. L. Cummins, although the latter was not definitely appointed as his D.A.D.M.S. until the 24th September.

During this advance the field operations were similar to what the medical services had experienced during their peace training and manoeuvres. Their work was consequently carried out more or less systematically in accordance with the principles laid down in the Field Service Regulations and there was little or no difficulty in the collection and evacuation of the casualties which occurred.

The bearer division of a field ambulance or a bearer sub-division with two or four ambulance wagons accompanied each infantry brigade, the main body following with the divisional train behind the divisional ammunition column, as in the case of the cavalry medical units.

Sick and wounded were thus collected by the bearer divisions and taken over from them by the tent divisions later in the day. The bearer divisions were then free to continue the advance with the brigades. The tent divisions cleared the sick and wounded to the refilling points either in ambulance wagons or in supply section wagons of the train, and handed them over there to the supply columns returning to railhead. But in several cases empty supply or ammunition column lorries passed the medical units on their return journey and had sick and wounded transferred to them direct. As a rule a tent sub-division was left behind with wounded until their transfer could be effected, and subsequently rejoined their unit at the next halt or later. In this way the collection of sick and wounded during the advance was carried out systematically, and no hitch appears to have occurred in subsequently clearing them by means of the supply columns to railheads.

During their advance to the Aisne, the field ambulances experienced considerable difficulty with their horses. A large number lost their shoes and this resulted in considerable delay, owing to there being no farrier with the field ambulances. The rough roads and, in the latter stages of the advance, the wet weather, added to the exhaustion of the horses, and many field ambulances, in order to lighten the loads, discarded their tentage and other articles of equipment, handing them over for custody in some instances to the mayor of the town or village through which they passed, or to ordnance officers. Others had to abandon some of their vehicles on the line of march.

The Cavalry Division Medical Services.

The cavalry field ambulances which had lost touch with the cavalry division during the retreat were sorted out and re-distributed during the advance. "A" Section of No. 3 Cavalry Field Ambulance which had accompanied No. 2 Cavalry Field Ambulance to Vilbert on the 5th September, joined its "B" section on the 6th September at Castins, where it formed a group with No. 1 and No. 4 Cavalry Field Ambulances. Major Goodwin, of No. 4 Cavalry Field Ambulance, and Captain Crean, with the light ambulance wagons of No. 1 Cavalry Field Ambulance, also rejoined their units after losing touch with them at Le Cateau on 25th August. No. 2 Cavalry Field Ambulance remained at Vilbert and moved to Pezarches on the 6th September. No. 5 moved on the same day from Segres to Marles. From then onwards these two cavalry field ambulances conformed with the movements of the 3rd and 5th Cavalry Brigades, while the 1st, 3rd and 4th Cavalry Field Ambulances followed the line of advance of the Cavalry Division on the right and came directly under the control of the A.D.M.S. of the Cavalry Division. The 2nd and 5th Cavalry Field Ambulances were under no direct administrative medical control and worked independently under the brigade commanders.

The three cavalry field ambulances with the Cavalry Division moved as one group from day to day with the divisional transport, detaching one medical officer and three light ambulance wagons to remain permanently with each brigade. The 2nd and 5th Cavalry Field Ambulances also detached medical officers and light ambulance wagons to move with their brigades, while the main body of the units followed behind the brigade ammunition columns.

The group formed by Nos. 1, 3 and 4 Cavalry Field Ambulances was placed under the direction of Major Goodwin, who received his orders from the A.D.M.S. of the Cavalry Division.

The medical officer and three light ambulance wagons from No. 1 Cavalry Field Ambulance went to the 4th Cavalry Brigade; those of No. 3 to the 2nd, and of No. 4 to the 1st Cavalry Brigade.

No. 1 Cavalry Field Ambulance, which had moved from Gournay-Chelles on the 4th September to Brie Comte Robert, made a long march of thirty miles in hot weather to Mormant on the following day and moved through Castins to Jouy on the 6th September. At Castins some wounded were collected and transferred to supply column lorries. The unit

then advanced on the 7th September to La Haute by way of Dagny, on the 8th to La Noue through Bellot, crossed the Marne on the 9th and halted at Mt. de Bonneil. During these days it did not open for work, but on the 10th September, during the advance to Licy-Clignon and Courchamps, between forty and fifty sick and wounded of an infantry action, some of the latter very severe cases, were collected and taken on with the field ambulance during the following day to Saponay by way of Bonnes and Grisolles. At 3 a.m. on the 12th September forty-two sick and wounded were transferred to railhead by the supply column lorries and No. 1 Cavalry Field Ambulance then marched to Loupeigne and Bazoches, where it arrived in heavy rain at 9 p.m.

No. 3 and No. 4 Cavalry Field Ambulances were associated with No. 1 Cavalry Field Ambulance during this advance to the Aisne. "A" Section of *No. 3 Cavalry Field Ambulance* had been ordered from Vilbert to Courpalay on the 6th September and thence to Castins, where it arrived in the afternoon and joined Nos. 1 and 4, and, as already noted, rejoined its "B" Section; but when Nos. 1 and 4 received orders to proceed to Jouy from Castins no orders reached No. 3, which consequently remained at Castins awaiting orders. It left Castins without orders at 6 a.m. on the 7th September, but one of its officers had been sent on to get in touch with the A.D.M.S. of the Cavalry Division and returned at 9.15 a.m. with orders to proceed to Jouy, where it arrived at noon, and remained in reserve. It then went on with No. 1 and No. 4 Cavalry Field Ambulances to La Haute. On the 8th September during the crossing of the Grand Morin, No. 3 Cavalry Field Ambulance was engaged in collecting wounded at a farm about two and a half miles north-east of La Ferté Gaucher. The wounds were chiefly from shrapnel, and one of the officers of the ambulance, Captain Painton, was severely wounded, sustaining a gunshot fracture of the thigh. On arriving at Bellot in the evening sixteen of the wounded, nine of which were severe cases, were transferred in charge of a medical officer and four orderlies by supply column lorries and sent back to railhead. The ambulance then went on to La Noue, where it rejoined Nos. 1 and 4 at midnight. It marched on the 9th with these units across the Marne to Mt. de Bonneil where the medical officer and orderlies sent on convoy duty rejoined. It halted at Courchamps on the night of the 10th September. No further incident occurred during the march to Bazoches. The conditions there on the night of the 12th/13th September

are described as miserable. The cavalry field ambulances bivouacked in heavy rain in a field and had not received their rations.

No. 4 *Cavalry Field Ambulance* opened a dressing station at the cross roads about three miles north of Jouy on the 7th September and collected wounded from a charge by a troop and a half of the 9th Lancers which had taken place against a squadron of German cavalry. The wounded were taken on through Dagny to La Haute and twenty-one evacuated from there to railhead in empty supply lorries at 11 p.m. Some of the wounded had been brought in to the dressing station in the light wagons detached for duty with cavalry brigades. The railheads were at Melun and Verneuil, and Major Goodwin had been informed at 9.30 a.m. of the 7th September that No. 3 Ambulance Train would be at the former place at 7 p.m. and No. 4 at the latter at 9 p.m.

After crossing the Grand Morin on the 8th September, No. 4 Cavalry Field Ambulance received a few wounded at Champ Martin during the day and took them on to Bellot and La Noue, where it arrived at 11.50 p.m. On the 9th September the unit moved to Mt. de Bonneil and transferred fifteen sick and wounded to railhead by supply lorries. On the 10th No. 4 Cavalry Field Ambulance reached Bonnes three miles east of Courchamps and was engaged with No. 1 Cavalry Field Ambulance in collecting wounded from the infantry action there. There were, however, no casualties amongst the cavalry. The unit arrived at Bazoches on the night of the 12th September in torrents of rain, after billeting the previous night at Saponay and evacuating fifty-one casualties by supply lorries. On the 13th September it moved to Villers-en-Prayères, on the Aisne, in the midst of heavy artillery fire which had been going on all day.

No. 2 and No. 5 Cavalry Field Ambulances, as noted above, moved independently of one another, the former with the 3rd Cavalry Brigade and the latter with the 5th. *No.* 2 *Cavalry Field Ambulance* had been left at Vilbert with the 3rd Cavalry Brigade on the 6th September, when Majors Goodwin and Birrell and "A" Section of No. 3 Cavalry Field Ambulance and details of No. 1 and No. 4 parted from it to rejoin the Cavalry Division. On the 6th September it went to Pezarches after a circuitous march from Vilbert by way of Marles and Chaumes and back through Vilbert. The brigade was in touch with the enemy at Marles and prevented the field ambulance moving direct from there to Pezarches. A few wounded were

collected by Lieutenant Littlejohn to the light ambulance wagons and evacuated by supply lorries. On the 7th September Major Langford Lloyd, who was in command of the unit, accompanied the brigade with four light ambulance wagons and one medical officer to Boissy by way of Epieds, Chailly and Coulommiers. The rest of the unit rejoined him at Boissy. On the following day the brigade was again in touch with the enemy and the light ambulance wagons moved with it as before. A dressing station was opened at Villers farm just north of Doué and 28 wounded collected. The heavy section of the unit was then moved up and took charge of them during the night. At 5 a.m. on the 9th September all the wounded were taken to Doué and transferred to No. 12 Field Ambulance, which had arrived there. No. 2 Cavalry Field Ambulance then moved with the brigade to Rogeville, just south of La Ferté-sous-Jouarre, and evacuated its sick by supply lorries from there. On the 10th September the Marne was crossed at Nanteuil at 4.45 a.m., the light wagons accompanying the brigade as before, leaving the rest of the unit to follow with the brigade transport. The brigade moved on to Gandelu, where it came into action. The light section reached Gandelu at 11 a.m. by way of Bezu and Marigny moving across country and opened a dressing station in the school. Twenty wounded together with some German wounded were collected.

The rest of the ambulance came up at 5 p.m. and the whole of No. 2 Cavalry Field Ambulance remained at the dressing station till 7 a.m. on the following day, the 11th September, when the light section moved on to catch up the brigade. It failed, however, to find it and also lost touch with the rest of the unit. It seems to have wandered through Brumetz, Montigny, La Ferté Milon, Marizy, Ste. Geneviève, and Chouy to Ancienville, where it arrived at 7 p.m. without seeing any British troops on the way. It continued to march forward from Ancienville at 7 a.m. on the 12th September and at Hartennes had news of No. 5 Cavalry Field Ambulance. It went through Louatre, Villers Helon, and across country to Parcy, Tigny, Taux and Rozières, where it arrived at night in the midst of a confused mass of columns entering the village in all directions. Major Langford Lloyd then took his light section to Ecuiry, a mile further east, for the night, and went on early the following morning through Acy and Serches under heavy shell fire to Ciry and Chassemy, where he heard that the 3rd Cavalry Brigade had its headquarters.

The main portion of Major Langford Lloyd's field ambulance which had been left at the dressing station at Gandelu, left Gandelu on the 11th September and marched through Billy-sur-Ourcq, Hartennes, Droizy and Nampteuil to Serches, where it was joined by the light section on the 13th September, and taken on to Chassemy.

No. 5 Cavalry Field Ambulance was at Segres, near Vilbert and Chaumes, with the 5th Cavalry Brigade when the advance to the Aisne commenced, and was evacuating its sick and wounded to the railhead at Verneuil. It commenced its advance in the afternoon of the 6th September through Fontenay and camped for the night at Lumigny, near Marles, thus keeping more or less to the line of railway between the railheads Verneuil and Marles. On the 7th September it moved in the forenoon to Chailly through Pezarches and Maupertuis, and remained parked at Chailly during the rest of the day. It left Chailly at 4.30 a.m. on the following day, and crossing the Grand Morin went to Rebais, where the brigade was in action. Wounded were collected under shell fire and the ambulance remained at Rebais till 3.45 a.m. on the 9th September. It crossed the Petit Morin in the forenoon after a long halt at Le Gravier, and continuing the march with frequent halts reached the Marne at Charly and parked for the night near Villiers, north of the river.

On the 10th September No. 5 Cavalry Field Ambulance advanced in a north-westerly direction from Villiers to Marigny, Vinly and Chezy. Between Vinly and Chezy it collected several wounded from the infantry engagement round Hautevesnes-Courchamps to houses opened as temporary hospitals at Vinly, and handed them over there to one of the field ambulances. No. 5 Cavalry Field Ambulance then went on to Passy for the night. On the 11th September it advanced to Chouy, where seven German wounded were attended to and left in a school; afterwards it went on to Hartennes by Billy-sur-Ourcq and Plessier. On the 12th September it left Hartennes at 6.30 a.m. and went to Cerseuil through Chacrise and Nampteuil. At Cerseuil it received orders to proceed to Ciry, where it remained until ordered on the following day to Serches. Apparently this cavalry field ambulance moved as a complete unit during the advance and did not form a light wagon and heavy wagon section moving independently of one another.

The Ist Corps Medical Services.

The field ambulances of the 1*st Division* were parked on the 6th September at Pompierre, near the fork of the roads south of Rozoy on the way to Courtomer. The bearer divisions were in advance with the brigades, and the tent divisions with the divisional train. The division was engaged during the day in a heavy rearguard action and wounded began to come in rapidly about mid-day. " A " Section of No. 1 Field Ambulance and the tent division of No. 3 opened dressing stations, and were kept busy till 6 p.m., when a message came from the A.D.M.S. of the division to evacuate the wounded by two motor lorries which were sent to the dressing station and also by another lorry three miles further back, to which the wounded were taken in ambulance wagons. In this way all the wounded from the dressing station of No. 1 were cleared except one man unfit for transport. Fifteen wounded had been brought to No. 3 Field Ambulance and five were evacuated by the motor lorries; the remainder were retained in the dressing station and evacuated later. No. 1 Field Ambulance and No. 3 were then ordered to move on to Vaudoy, and the former arrived there at 7.30 p.m. and the latter at midnight. No. 2 remained at Pompierre with the wounded until 8 p.m. the following day and reached Vaudoy just before midnight of the 7th September.

In the meantime Nos. 1 and 2, after receiving and evacuating casualties sent back by the bearer division of No. 1 from Le Plessis, had left Vaudoy in the afternoon of the 7th and marched to Dagny near Chouy, where divisional headquarters was established. The division crossed the Grand Morin and Petit Morin on the 8th September and was in the area between the latter river and the Marne. The field ambulances, however, remained at Dagny during that day, and were joined by No. 2 in the afternoon. Advantage was taken of the halt to readjust loads so as to provide the bearer division with transport and equipment to enable them to work independently of the tent divisions.

During the advance which took place on the 9th, 10th, 11th and 12th September the tent divisions of the 1st Division Field Ambulances no longer marched as a group together but leap-frogged one over the other, while the bearer divisions remained with the brigades. Thus No. 3 Field Ambulance left Dagny on the night of the 8th/9th September and marched to Sablonnière. It arrived there at 5 a.m. and took over fifty-seven sick and wounded from the bearer division of No. 1, evacuating

them to railhead by supply lorries in the afternoon. No. 1 did not leave Dagny until 4.30 a.m. on the 9th September, after receiving orders to join the divisional train at once. There was then no indication of where the train was, and the field ambulance moved by way of Choisy, St. Siméon and Rebais to Sablonnière, where it passed No. 3, under orders to press on through Hondevilliers and Basseville. It halted at the latter place at 1 p.m. after marching continuously for eight hours. At Basseville it was told to settle down for the night, but at 4 p.m. orders came to move on to Villiers-sur-Marne through Nogent and Charly. It arrived at 10 p.m. and joined its bearer division there. No. 2 Field Ambulance left Dagny at 5 a.m. and halted for the day at Rebais ; so that on the night of the 9th/10th September the 1st Division field ambulances were strung out along a line from Rebais to Villiers-sur-Marne, some fifteen miles in length, with No. 2 at Rebais, No. 3 at Sablonnière, and No. 1 at Villiers.

On the 10th September all three field ambulances of the 1st Division moved to the battle area around Courchamps, No. 3 going forward to Priez, No. 1 to Courchamps and No. 2 further back to Lucy-le-Bocage. Before marching to Courchamps, No. 1 Field Ambulance had orders to evacuate its sick and wounded to a refilling point at Le Thiolet, but had great difficulty in getting them there, owing to the narrowness and congestion of the roads. It received orders at 2.30 p.m. to proceed at once to Courchamps by way of Bouresches and Torcy, but had again great difficulty in advancing on account of the congested roads. It reached Torcy, two miles south of Courchamps, at 4.30 p.m., and its further advance was blocked by the divisional transport, so much so that it did not reach Courchamps till 10 p.m., thus taking five and a half hours to cover a distance of two miles. No. 3 Field Ambulance had left Sablonnière at 6 a.m. and reached Courchamps in advance of No. 1 before the roads had become congested, and had opened a dressing station there. It went on to Priez at 10 p.m. after the arrival of No. 1. No. 2 Field Ambulance reached Lucy-le-Bocage at 7.30 p.m., having left Rebais at 4 a.m. It reached Charly at 10 a.m. and rested during the greater part of the day there. On the 11th September No. 2 came up to Courchamps by 7 a.m. and took over 110 sick and wounded, remaining there with them during the day and night of the 11th/12th September. No. 3 took over seventy-seven casualties at Priez from the bearer division of No. 1 Field Ambulance and also remained at Priez during the day and night of the 11th/12th September.

All these sick and wounded were evacuated by supply lorries to railhead before No. 2 and No. 3 moved forward again on the 12th September.

No. 1 Field Ambulance in the meantime was ordered on the 11th September to move to Coincy, on the Château Thierry-Soissons line of railway, about two miles south of the Ourcq. On arriving at Priez, where it handed over its casualties to No. 3 Field Ambulance, it found the roads again blocked and evidence of severe fighting having taken place in the neighbourhood. It returned to Courchamps and reached Coincy at 2 p.m. through Licy, Grisolles and Rocourt by a different route from that originally intended. On the 12th September it moved to Bazoches, through Fère-en-Tardenois and Loupeigne. A dressing station was opened in the church at Bazoches and fifty casualties collected. No. 2 Field Ambulance, after evacuating the sick and wounded taken over at Courchamps, left Courchamps at 7.30 a.m. on the 12th September and went to Loupeigne, where it arrived at 6.15 p.m. and parked for the night. No. 3 went on to Lhuys on the 12th September and bivouacked there.

On the 13th September, when the division forced the passage of the Aisne, " B " section of No. 1 Field Ambulance was left at Bazoches, to evacuate casualties collected from the other field ambulances to an ambulance train which was due at Bazoches in the evening, while No. 2 and the main body of No. 1 went on to Vauxcère and No. 3 to Paars.

The 2nd Division, during the advance to the Aisne, operated on the immediate left of the 1st Division, moving from Fontenay to Braisne and Pont Arcy on the Aisne, through St. Siméon on the Grand Morin, La Trétoire and Boitron on the Petit Morin, Charly on the Marne, Hautevesnes on the Clignon, and Breny-Oulchy on the Ourcq. It was heavily engaged at the Petit Morin and at Hautevesnes, but otherwise did not have many casualties until the Aisne was reached. When the advance commenced No. 4 Field Ambulance consisted only of Major Faulkner, the quartermaster, Lieutenant Jones, and forty-six other ranks of the R.A.M.C., with six ambulance wagons, its general service wagons, water carts and forage carts, together with some details of personnel and transport of other units picked up on the line of the retreat. This was the remnant which had escaped capture at Landrecies on the 26th August. The other field ambulances of the division, No. 5 and No. 6, were fairly complete but had lost some of their medical officers and equipment. Altogether, at the time of the advance, the

shortage in R.A.M.C. personnel in the division was fifteen officers and 150 other ranks, and the medical units had lost nine ambulance wagons, one general service wagon, two forage carts and two water carts. Lieut-Colonel Copeland, who was acting as A.D.M.S. after the capture of Colonel H. M. Thompson at Prisches on the 26th August, rejoined his field ambulance, No. 5, on the 9th September, when Lieut.-Colonel Dalton, who had been appointed A.D.M.S. of the division from command of No. 1 General Hospital, reported his arrival at divisional headquarters.

During the fighting on the Petit Morin on the 8th September an advanced dressing station was opened at 4 p.m. across the river in a farm, La Belle Idée, at Boitron, by the bearer division of No. 6 Field Ambulance, whose headquarters were at Rebais. Its tent division was sent on to the dressing station shortly afterwards. Nos. 4 and 5 Field Ambulances appear to have collected wounded, and the A.D.M.S. arranged at 4 a.m. on the 9th September for all the casualties to be brought to the dressing station at Boitron and evacuated from there by supply lorries.

During the enemy's rearguard action at Hautevesnes, No. 5 and No. 6 Field Ambulances collected on the 10th September 104 British and 50 German wounded. The casualties were chiefly in the 6th Brigade. They were taken over by No. 4 Field Ambulance. Their evacuation took place from a refilling point at Latilly by supply lorries to railhead at St. Siméon. But an incident which exemplified the difficulties of co-ordinating the transfer of casualties from a medical unit to a supply unit occurred in connection with this transfer of wounded. Owing to road difficulties motor lorries were unable to come up to clear the field ambulances on the night of the 10th/11th September, as apparently had been arranged, and the wounded were consequently sent in the ambulance wagons during the 11th September to the divisional refilling point for transfer to the lorries there. They arrived before the latter had been unloaded and caused a block of transport at the refilling point, which greatly delayed the transfer of supplies to the divisional train and the subsequent return of the supply lorries to railhead. This was brought to the notice of the division by the Ist Army Corps staff, and was evidently due to confusion caused by attempts to transfer wounded to supply lorries when the supply lorries were engaged in transferring supplies to regimental wagons.

During the subsequent advance of the 2nd Division to the

Aisne the field ambulances were not engaged in collecting wounded. No. 4 Field Ambulance received reinforcements on the 12th September at Oulchy and marched to Courcelles and thence, on the 13th, to Vauxtin. No. 5 reached Braisne on the night of the 12th September and proceeded towards Pont Arcy on the evening of the 13th, but after reaching Dhuizel was ordered back to a farm, Mont Thurris, north of Braisne. No. 6 also arrived at Braisne on the 12th September, after halting during the previous night at Oulchy le Château. It went in the evening of the following day to Vieil Arcy.

The IInd Corps Medical Services.

The IInd Corps divisions advanced to the Aisne on the left of the Ist Corps, with the 3rd Division on the right in touch with the 2nd Division and with the 5th Division on the left. These divisions advanced through the Forest of Crécy, retracing the line of the retreat to a considerable extent, crossed the Grand Morin through Coulommiers, and the Marne at Méry and Saacy between La Ferté-sous-Jouarre and Charly. The divisions then moved through Bézu and Chezy towards Billy-sur-Ourcq. The 3rd Division then moved through Grand Rozoy to Braisne and attacked the enemy positions on the Aisne from Chassemy on the right bank of the Vesle, while the 5th Division went through Billy-sur-Ourcq and approached the Aisne on the left bank or west of the Vesle, through Chacrise and Serches. The advanced guard of the 3rd Division was engaged with the enemy in rearguard actions during the night of the 6th/7th September in the neighbourhood of Faremontiers, on the 8th September at La Trétoire north of Rebais, on the 9th September north of Bézu, and on the 10th September in the neighbourhood of Chezy. The 5th Division was engaged between Doué and St. Cyr on the 8th September, and on the high ground above Méry and at Pisseloup on the 9th September.

In the advance of the *3rd Division*, which moved in two columns with two of its brigades forming the left and the third brigade the right column, a bearer sub-division with three ambulance wagons followed the advanced guard while the main body of the field ambulances followed the ammunition column. A dressing station was formed in a café at Faremontiers on the 7th September by a bearer sub-division of No. 7 Field Ambulance which was with the advanced guard. It had collected forty-one wounded, who were taken to an ambulance train at Coulommiers by the ambulance wagons

of the unit the same day. Up till then the sick and wounded were being sent back to Lumigny for transfer to supply lorries. Several wounded of the cavalry, and stragglers, had been picked up by the 3rd Division field ambulances on their advance to Lumigny on the 6th September. In the fighting on the 8th September, north of Rebais, No. 8 Field Ambulance opened a dressing station at a small village near Boisbaudry, about three miles north of Rebais, on the south bank of the Petit Morin; eighty-eight wounded were brought in. No. 7 and No. 9 Field Ambulances also picked up several wounded on marching to Orly on the north of the river, the same day. On the 9th September No. 9 Field Ambulance crossed the Marne and opened a dressing station in a school and church at Bézu; 146 wounded were collected into it, 100 of them being from the 5th Division. One hundred and thirty-one were evacuated early the following morning by supply lorries to the ambulance train at Coulommiers. The remainder were left in charge of two medical officers and six orderlies. A bearer sub-division of No. 9 Field Ambulance was with the leading brigade of the division during the advance on the 10th September through Chezy to Dammard and opened a dressing station at Neuilly la Poterie in a small château. Twenty-seven wounded were collected from the wooded country in the neighbourhood and left in charge of a tent sub-division, after the main body of the field ambulance had arrived. The woods between the village and Chezy were searched by one of the battalions and wounded were collected to the road side, where they were picked up and taken on to Chezy by the field ambulance.

All the sick and wounded of the *5th Division*, collected by the field ambulances on the 8th September, were sent to a section of No. 15 Field Ambulance, which had established a dressing station at Doué, and from there were evacuated to the ambulance train at Coulommiers. On the 9th September about ninety-five wounded were also collected to No. 15 Field Ambulance from the area above Méry. The rearguard action at Pisseloup had taken place in the afternoon. The tentage of No. 15 Field Ambulance was pitched as a dressing station in the field at Méry where the unit bivouacked for the night, and the church of the village was also taken over as a dressing station. Many severe cases of wounds were treated, the bearer squads continuing to bring in wounded till after midnight. In some cases they carried loaded stretchers several miles. All the wounded were evacuated on the morning of the 10th by ambulance wagons, to meet supply lorries

on the road four miles from Méry, under the charge of a medical officer and orderlies. On the 10th September No. 14 Field Ambulance found in a temporary hospital at Montreuil three German officers and 46 other ranks wounded and one man sick, also one British officer and 21 other ranks wounded and 15 other ranks sick, who had been left behind by the Germans during their retreat. These were left in charge of two officers and a detachment of No. 14 Field Ambulance under Captain Richards, and with the exception of some who died, all were evacuated on the 12th September to railhead in the divisional supply column lorries.

During the advance of the 3rd Division Lieut.-Colonel Kennedy, who commanded No. 7 Field Ambulance, and, with personnel of the tent division, had got separated from the unit at St. Quentin on the 27th August during the retreat, rejoined it at Bussières, north of Doué, on the night of the 8th September, from Coulommiers. He found all the ambulance wagons, water carts, forage carts, and four of the six general service wagons, with five of the medical officers present. He, and the personnel of No. 7 Field Ambulance with him, had been detained on duty at the advanced base, which had been established at Le Mans, until the 4th September, and he was then sent up to the field army with reinforcements of 12 officers and 293 other ranks of the R.A.M.C., divided into three parties of 100, 155, and 50 for the Ist, IInd and IIIrd Army Corps respectively. Lieut.-Colonel Kennedy arrived with his party at Coulommiers at 11 a.m. on the 8th September by train and marched from there to Bussières. On the 9th September the command of No. 8 Field Ambulance was transferred from Lieut.-Colonel Stone to Major Maurice, who had been in charge of No. 7 Field Ambulance during Lieut.-Colonel Kennedy's absence.

On the IInd Corps reaching the Aisne, the A.D.M.S. and field ambulances of the 3rd Division were at Braisne, and the A.D.M.S. of the 5th Division and No. 13 Field Ambulance at Serches, with No. 14 at Jury, about one and a half miles nearer the Aisne, and No. 15 at Mont de Soissons farm on the high ground about one and a half miles south of Serches, on the road to Chacrise.

The IIIrd Corps Medical Services.

The *IIIrd Corps*, during the advance to the Aisne, consisted of the 4th Division and 19th Brigade. The former advanced in two columns, two of its brigades forming the right column

and the third brigade the left, similar to the march formation of the 3rd Division. The 19th Brigade was in reserve. All three field ambulances of the *4th Division* followed the main or right column. One bearer sub-division was with the advanced guard, but three ambulance wagons and personnel were afterwards detached to join the left column, which had several wounded in front of Maisoncelles on the 7th September. The division was hotly engaged on the 8th and 9th September on approaching the Marne and in effecting a crossing at La Ferté-sous-Jouarre. All the field ambulances were employed in collecting the wounded. No. 11 Field Ambulance collected thirty-one on the 8th at Signy-Signets, west of Jouarre, and took them on to Les Corbiers, where some of them and the sick were transferred at 10 p.m. to supply lorries and the others brought on to the Château Perrouse, in Jouarre, where No. 10 and No. 12 Field Ambulances were already established. On the 9th September the bulk of the wounded had been collected into a château at the cross roads in the town of La Ferté, where there had been street fighting, and were only cleared from there with difficulty to the Château Perrouse by ambulance wagons of No. 12 Field Ambulance, owing to the road at La Ferté being swept by machine gun fire. All the wounded were evacuated to Coulommiers on the 9th September, together with Major-General Snow, commanding the division, who had met with a severe accident by his horse falling with him during the march that day. The field ambulances of the 4th Division then crossed the Marne by the pontoon bridge in the forenoon of the 10th September, and after long and trying marches reached the approaches to the Aisne on the 12th September, advancing through Coulombs and Chouy to Septmonts, Noyant and Rozières. The 11th Infantry Brigade had been ordered to make an attack on the night of the 12th/13th September on the bridge across the Aisne at Venizel, three miles north of Septmonts, and a bearer sub-division of No. 10 Field Ambulance was under orders to proceed to Venizel that night. It was thus the first of the medical units to reach the Aisne.

Army Troops Field Ambulances.

"A" Section of *No.* 19 *Field Ambulance* was joined at Grisy on the 6th September by "B" and "C" Sections of No. 20 Field Ambulance, which had been sent on from Melun, under Major Biggam, on the 5th September. These three sections then formed the field ambulance of the 19th

Brigade and came under the command of Major Biggam until the morning of the 11th September, when Major Rattray, who was originally in command of the unit but had been admitted to No. 7 General Hospital at Amiens on the 23rd August on account of an injury received at Rouen the previous night, returned to duty. The bearer sub-divisions of " B " and " C " Sections of No. 19 Field Ambulance remained with the headquarters of the Ist Corps after their tent sub-divisions had been captured at Landrecies.* Some of the transport and personnel of the sections of No. 19 Field Ambulance which remained during the advance to the Aisne with the headquarters of the Ist Corps were transferred to No. 1 Field Ambulance of the 1st Division at Jouy on the 8th September. Four ambulance wagons, two general service wagons, and one water cart, with twenty-six men, were so detached, leaving with the sections three ambulance wagons, two general service wagons, two forage and one water cart and a personnel of two officers and sixty-two other ranks. The result of these changes was that there were practically two units working as No. 19 Field Ambulance during the advance, one as the field ambulance with the 19th Infantry Brigade, IIIrd Army Corps, and the other with the headquarters of the Ist Army Corps. The latter appears to have been employed to a very small extent only during the advance. The sections with the 19th Infantry Brigade also had comparatively little work to do in connexion with battle casualties, and were mainly concerned in dealing with the sick and stragglers and transferring them, when necessary, to railhead, but on the 9th September the brigade was shelled in the morning from the direction of La Ferté-sous-Jouarre, and twenty-four wounded, all from shrapnel, were taken over by No. 19 Field Ambulance near Signy-Signets. They were to have been transferred by supply lorries to Coulommiers railhead, but as these were unable to take them, Major Biggam sent them in charge of one of his officers to Coulommiers in the ambulance wagons of the unit.

After marching by way of Dhuizy, Certigny, Hervilliers, Passy, Marizy Ste. Geneviève, Chouy and Villers Helon, No. 19 Field Ambulance, with the 19th Infantry Brigade, arrived at Buzancy, about four miles south of Soissons, on the night of the 12th September and halted there till the 14th, when it

* These bearer sub-divisions were made into one section on the 25th September and became " B " section of No. 20 Field Ambulance on the 13th October.

became engaged in work during the battle of the Aisne. In the march to the Ourcq, at Marizy Ste. Geneviève, on the 12th September many men of the brigade were picked up on the road, suffering from the effects of wet, rheumatism, diarrhoea and sore feet, and were sent back by supply column lorries on the 13th in charge of a medical officer to Fère-en-Tardenois.

No. 20 Field Ambulance moved with G.H.Q., and consisted of one section, "A" Section, only. It had marched to Melun on the 3rd September and took over a temporary hospital there. On the 9th September it moved by rail to Coulommiers and helped in loading No. 3 Ambulance Train, afterwards acting as an aid post at the railway station, until the 12th September, when it handed over the work to No. 1 Clearing Hospital. It then marched to Hondevillers, and on the following day, the 13th September, to Château Thierry, sending on a detachment to Fère-en-Tardenois to open an aid post at the railway station. At Château Thierry it made preparations for a casualty clearing station, which, however, was not opened, and evacuated some British wounded, found in a French hospital, by a French ambulance train. On the 14th September it marched to Fère-en-Tardenois where it remained during the battle of the Aisne.

German Wounded.

Most of the German wounded picked up during the advance by the British field ambulances were found by search parties in twos and threes, but at Montreuil and Cocherel considerable numbers were found in temporary hospitals with a small medical personnel in charge. Captain Richards, who was left in charge of the patients at Montreuil on the 10th September, found them with their wounds well treated and dressed, the four German orderlies left behind being capable and working well and willingly under the British detachment. Two German medical orderlies had been left by the enemy in charge of the forty-three wounded at Cocherel. One British soldier, Pte. G. C. Stapleton, of the 2nd Battalion South Lancashire Regiment, was amongst them. He had been captured and taken on by the German field ambulance during the previous four days and had been kindly treated. It is fair to mention this because the fact that no German medical officers were left behind with their wounded gave rise to a considerable amount of criticism.

Evacuation of Sick and Wounded.

The arrangements for the evacuation of the sick and wounded to railhead and to the lines of communication were much more methodically carried out than was possible during the retreat from Mons. The empty supply lorries were systematically employed, although in some instances the two lorries allotted specially for medical services did not materialize. At all railheads to which the lorries brought the wounded there was an aid post or reception station, formed either by No. 20 Field Ambulance or by No. 1 Clearing Hospital, which was moved from Le Mans to Villeneuve St. Georges on the 7th September, and from there was ordered to form aid posts at the railheads at Chaumes, Marles and Tournan. These aid posts were instructed to send orderlies forward with the supply columns in order to take charge of sick and wounded returning to railheads in the empty lorries.

The Clearing Hospitals.—On the 9th September No. 1 Clearing Hospital sent its aid post detachments to Mortcerf and Coulommiers, the new railheads. The detachment at Mortcerf rejoined the unit at Coulommiers on the following day. On the 12th September No. 1 Clearing Hospital was transferred to Fère-en-Tardenois, where it remained during the battle of the Aisne. The only other clearing hospital which came up to the area of the Marne and the Aisne during the advance was No. 6, under Lieut.-Colonel B. Forde. It will be remembered that this unit was left to the last at St. Quentin and had to abandon all its equipment there on the 27th August. Lieut.-Colonel Forde and the personnel of the unit, after being employed in helping to load and unload the equipment of the general hospitals during their transfer from Rouen to St. Nazaire, were entrained on the 6th September under orders to proceed to the IIIrd Corps as reinforcements. They arrived at Coulommiers on the 8th September, and reached the refilling point at Grand Clairet, south-west of Jouarre, at 9 p.m. on the following day. Failing to find the headquarters of the IIIrd Corps Lieut.-Colonel Forde attached himself and his personnel to No. 10 Field Ambulance on the 10th September, and marched with it to Noyant, eventually taking over a French hospital at the château of Rozières, in the neighbourhood of Noyant and Septmonts, where it worked as a clearing hospital during the subsequent fighting on the Aisne.

No. 2 Clearing Hospital was moving up to the Aisne area from Angers and Villeneuve on the 11th September and was on its way to Neuilly St. Front on the 12th September. No. 3

worked as a reception station and aid post at Le Mans railway station and afterwards at Villeneuve. It did not come up to the Aisne front. No. 4 was at Nantes the greater part of the time waiting orders. It left Nantes for the Aisne front on the 11th September and, after delays on the railway line at Le Mans and Villeneuve St. Georges, arrived eventually at Braisne on the 17th September. While at Villeneuve St. Georges it helped in the railway aid post there. No. 5 was also kept at Nantes waiting orders during the whole period and did not move to the Aisne area until the 15th September, where it opened at first at Fère-en-Tardenois and later at Braisne.

The work carried on at railheads by No. 20 Field Ambulance and No. 1 Clearing Hospital for the reception of sick and wounded and their entertainment was supplemented by Major Webb and his sanitary squads, who performed similar duties at St. Siméon and elsewhere.

The Ambulance Trains.—The only ambulance trains used during the advance to the Aisne were Nos. 1, 2, 3, the combined 4 and 5, and the Franco-British. The regulating station was at Villeneuve St. Georges, and all trains proceeding to the front passed through it. Each made one trip only to the area of the advance during the period 6th to 12th September. No. 1 went to Coulommiers and St. Siméon on the 10th and 11th and to Boissy on the 12th September. It took its load of sick and wounded to Angers, Nantes and St. Nazaire, arriving at Angers on the 13th September. No. 2 was at Coulommiers at 5 a.m. on the 10th September and entrained sick and wounded there at Boissy before returning to the regulating station, and detrained at Nantes on the 12th September. No. 3 went on the 6th September to Melun and took casualties from No. 20 Field Ambulance to Villeneuve. It then went on the 7th September to Marles and Chaumes and returned with casualties to Villeneuve on the 8th, where it sent five of its wagons to Tournan railhead. On the 9th it entrained fifty casualties at Mortcerf railhead and 300 at Coulommiers, taking them to Villeneuve, where it picked up its five wagons with ninety sick and wounded from Tournan, and then went on to St. Nazaire. No. 4 and 5 combined ambulance train was at Coulommiers on the 7th September, and a section was sent to St. Siméon to entrain casualties there. It returned to Coulommiers the same day. The train was now full and left for the lines of communication on the night of the 8th September, arriving at St. Nazaire on the afternoon of the 10th. The

Franco-British ambulance train was at Verneuil on the 5th and took sick and wounded to Nantes on the 7th September. It went to Coulommiers on the 8th and cleared its load of sick and wounded to the "Asturias" at St. Nazaire on the 10th September.

The Casualties.

In the journeys of the ambulance trains to the bases a total of 2,112 sick and wounded were evacuated between the 7th and 12th September, as follows :—

Ambulance Train.	British.	Germans.	Total.
No. 1	548*	46	594
No. 2	396	34	430
No. 3	440	—	440
No. 4 and 5 comb.	418	—	418
Franco-British	230	—	230
Total	2,032	80	2,112

The actual casualties during each phase of the advance and with the different formations were not recorded in the administrative medical officers' diaries. The losses amongst the R.A.M.C. between the advance to Mons and the 12th September were 3 officers killed, 5 wounded and 39 missing; one other ranks killed, 21 wounded and 364 missing.

Many of the slighter cases of sickness and wounds were evacuated by supply trains and other improvised trains, of which there is no clear report, beyond the fact that the goods wagons were well filled with straw and clean, except in one or two instances where no straw had been obtainable, and that they were always accompanied by detachments from clearing hospitals or field medical units. It is important to note this as exaggerated statements were made to the effect that wounded were being evacuated in cattle trucks. The so-called cattle trucks were the ordinary "fourgons de marchandise" which are marked as having a carrying capacity for men or horses and in no respects of the same character as the cattle trucks used on British railways.

The Lines of Communication.

On the lines of communication the medical situation during this period caused much anxiety. Sea bases were at St.

* Of these, 301 were shown as sick.

Nazaire and at Nantes. The three cross-channel hospital ships could be brought up to Nantes, but they had insufficient coal capacity for the ocean journey from St. Nazaire to Southampton. The " Asturias " and the " Carisbrook Castle " had been added to the fleet, but their draught prevented them going beyond St. Nazaire. The docks and quays there were blocked, the 6th Division was rapidly being disembarked, and much of the railway traffic was required for its transfer to the front. Ambulance trains, ordinary trains, and empty supply trains returning with sick and wounded were consequently much delayed at all stages of their journey to the base, while units, such as clearing hospitals, under orders to move up the line, were equally delayed and halted at various sidings for days. Great difficulty was experienced in obtaining suitable buildings and camp sites for the general and stationary hospitals, one of the chief difficulties being the water supply. The new line of communication was also an important line for the evacuation of French sick and wounded, and suitable sites and buildings in the principal towns had been already occupied. Consequently hospitals could not be opened rapidly and, unless a hospital ship happened to be in the docks at St. Nazaire, sick and wounded arriving by train had to remain under treatment on the train until hospital or ship accommodation was available, or they had to be transferred to transports direct for conveyance to England. The equipment of the hospitals arrived mixed up in hopeless confusion during the rapid embarkation of the general hospitals at Rouen and Havre and their disembarkation at St. Nazaire. Indeed, the equipment of No. 2 General Hospital, instead of being disembarked at St. Nazaire, went back to England with the transport on which it had been loaded.

The New Bases.—In consequence of these confused conditions on the lines of communication and the bases during the period of the advance, very few of the general and stationary hospitals could be opened. The localities selected for them were St. Nazaire, Angers, Nantes and Le Mans. No. 3 General and Nos. 6 and 8 Stationary Hospitals were opened at St. Nazaire. No. 3 General Hospital had opened as a camp hospital until the 10th September, when it moved into school buildings, its place being taken in the camp by No. 6 Stationary. No. 8 Stationary Hospital was being opened in the camp about two miles from St. Nazaire on the 12th September. At Angers No. 5 General Hospital took over a school on the 8th September, but was not equipped till the 13th. No. 9 General Hospital

had opened at Nantes, as noted in the previous chapter, and had been receiving sick and wounded since the 4th September. Between that date and the 13th September it received 694 sick and wounded. Nos. 2 and 3 Stationary Hospitals joined it at Nantes, but had not opened for work until the battle of the Aisne had commenced.

At Le Mans there were no general hospitals, but Nos. 1 and 5 Stationary Hospitals opened, the latter on the 2nd September, as already noted, and the former on the 10th September.

All the remaining general and stationary hospitals, except the personnel of No. 7 General Hospital and No. 9 and No. 10 Stationary, were unemployed and waiting orders, but No. 4 General Hospital, at the end of the period, was ordered to Versailles and arrived there on the 12th September. No. 7 General Hospital was broken up, its personnel being distributed as reinforcements to the field units, as rest station parties and as personnel for new ambulance trains. The unit itself ceased to exist until it was reformed in June 1915 at St. Omer. Its nursing sisters were distributed for work in railway rest station parties. The personnel of other hospitals waiting orders were in rest camps at the bases, employed in various fatigue duties. The disposal of the nursing sister personnel was a problem at the time, as there were no means of employing them; as many as 233, for example, had to be accommodated in hotels at Pormetut, a seaside resort near St. Nazaire, on the 6th September.

Railway Rest Stations.—No. 10 Stationary Hospital was ordered on the 5th September to divide into five sections and form railway rest station parties at Nantes, Angers, Tours, Blois and Orleans, along the line of evacuation by ambulance trains, but the line was changed on the 7th September to Nantes, Angers, Tours, Châteaudun and Bretigny, and the rest stations were eventually established at these places. The formation of railway rest stations was perhaps the chief feature of the organization of the L. of C. medical services during this period.*

As has already been noted, No. 20 Field Ambulance, Major Webb's sanitary squads, and No. 1 Clearing Hospital, were utilized in this way at the railheads at the front and at the regulating station at Villeneuve, while No. 3 Clearing Hospital was employed at the railway station at Le Mans But with the exception of Le Mans and St. Nazaire, where No. 9 Stationary

* R.A.M.C. Training 1911, para. 289, draws attention to the necessity of establishing railway rest stations.

Hospital formed rest station parties, each consisting of one medical officer, one non-commissioned officer and five men with a small detention ward of five beds, emergency equipment and comforts, for detraining, embarking and disembarking duties, the whole of the railway rest station work between the regulating station and the base was carried out by No. 10 Stationary Hospital. The headquarters of the unit was at Angers on the 9th September. The rest station there was in a marquee with ten beds, with a personnel of four officers and twenty-two other ranks. Hot meals were supplied to all sick and wounded on trains passing through, night and day. As many as 300 or 400 could be fed in half an hour when due notice of the arrival of the train was received. Serious cases were removed to hospital in one of the motor ambulance cars, which had now commenced to arrive from the War Office. Other cases were attended to and re-dressed when necessary, and additional rations were put on the ambulance trains when required. Similar arrangements were made at Nantes, Tours, Châteaudun and Bretigny, the personnel at each being one medical officer and fifteen other ranks. At Bretigny a small French hospital of twenty beds was placed at the disposal of the British detachment. These rest stations were established between the 9th and 11th of September and continued their work so long as sick and wounded were being evacuated through the Nantes and St. Nazaire sea bases.

Convalescent depôts were opened at St. Nazaire and Le Mans on the 8th and 9th September, and relieved the acute congestion which was occurring in No. 3 General Hospital and No. 5 Stationary Hospital, the only hospital units established at that time.

Medical Stores.—The base depôts of medical stores were transferred to Nantes by sea on the change of bases from the Channel to the Atlantic ports. No. 1 opened at Nantes, and Nos. 2 and 3 were sent to St. Nazaire but had not opened for work during the period of the advance to the Aisne. No. 1 was the only advanced depôt in a position to open, and was at Le Mans. No. 2 and No. 3 had to be re-formed after leaving Amiens, and this was in process of being carried out by stores from No. 1 Base Depôt at Nantes. There was great delay and uncertainty in getting stores up to the field units, and eventually consignments had to be sent in motor ambulance cars, or were conducted by R.A.M.C. personnel when they were sent by rail.

Sanitary Sections.—Both No. 1 and No. 2 Sanitary Sections

were at the St. Nazaire base, and all the sanitary squads, with the exception of three, which were with Major Webb at railheads, were at Le Mans. The D.M.S. had arranged with the B.R.C.S. to obtain 100 men of the St. John Ambulance Brigade as sanitary labourers for sanitary work at Nantes, but, if these were necessary, the application for them should have been sent to the War Office, and the Adjutant-General informed him that such work should be obtained from ineffectives in the base rest camps, and reported to the War Office that only twenty extra men would be required for the purpose.

Voluntary Aid.—During this phase of the operations Surg.-General Woodhouse was in close touch with Sir Alfred Keogh, the Chief Commissioner of the B.R.C.S., and had asked him to open a store at Nantes for Red Cross Society's stores on the 4th September. A large quantity of these stores were unloaded at St. Nazaire on the 15th September, and had to be placed under a guard of the R.A.M.C. to prevent the hospital units taking articles from them without check. Certain voluntary hospitals had been opened in Paris or its neighbourhood. One voluntary hospital had apparently gone to Cherbourg, and was eventually transferred to Rouen, and placed under the command of Lieut.-Colonel Whitestone, R.A.M.C. The Red Cross Society was anxious to transfer a hospital from Paris to St. Nazaire, but the congestion of traffic and the difficulty of finding accommodation were unfavourable to bringing voluntary hospitals to that base. The Australian Voluntary Hospital, however, which had arrived at Havre when the change of base was about to take place, had been transferred to St. Nazaire and had taken over a private nursing home at a rent of £100 per month. It had thirty-eight beds for officers and ninety-eight for other ranks, and provided much-needed accommodation for serious cases of wounds from the 7th September onwards while the general hospitals were being prepared. It was in possession of ten motor ambulance cars, which had been presented to it as gifts. When a hospital was urgently required at Paris towards the end of the advance, Surg.-General Woodhouse was anxious to employ certain voluntary hospitals for this purpose, but the Adjutant-General objected to this and No. 4 General Hospital was consequently brought up to Versailles.

Administration.—The experiences of the retreat were already leading to improvements in organization and administration. As early as the 7th September, Sir Douglas Haig, the Ist Army Corps Commander, was making enquiries as to the

possibility of replacing horse-drawn ambulance wagons by motor ambulance cars. When the large War Office consignment of cars, which had embarked at Avonmouth on that date, arrived at Nantes three or four days later, they were distributed at first to various bases, but a number were retained under the direct control of the D.M.S. to form the nucleus of a motor ambulance convoy. The D.M.S. also applied through G.H.Q. for as many more ambulance cars as could be supplied, and the War Office was rapidly acquiring numbers of these, fitted with a standard body, which had been approved by the Director-General's branch. Surg.-General Woodhouse had also approved of Sir Alfred Keogh sending a telegram to the British Red Cross Society on the 8th September to send to France as many motor ambulance cars as possible.

The appointment of a D.D.M.S. to the Ist Corps was urged by G.H.Q. on the 7th September, but the D.M.S. was not in a position to appoint an officer to the post, until G.H.Q. two days later informed him by telegram that it was essential to appoint an officer at once. Lieut.-Colonel N. Ferguson, from No. 4 General Hospital, was consequently appointed on the 10th September, the command of No. 4 General Hospital being given to Colonel F. Smith.

It was found impossible with only six ambulance trains to maintain rapid evacuation of sick and wounded. It was essential that at least one ambulance train should always be waiting at the regulating station to proceed to railheads and this requirement could not be met. Consequently, on the 10th September, Major Moore, who was with the Franco-British train, was replaced by Major Adye-Curran and instructed to organize three more trains. When suitable trains with inter-communication had been formed, it was decided to allot nursing sisters to them. The personnel for the new trains was to be found from No. 7 General Hospital. On the 12th September the Chief Commissioner of the B.R.C.S. was also asked to organize an ambulance train.

The headquarters of the D.M.S. remained at Le Mans, although on the 13th September the headquarters of the L. of C. moved to Villeneuve St. Georges. The D.D.M.S., L. of C., remained at St. Nazaire. On the 12th September orders that no more hospitals were to be opened at St. Nazaire were issued, and those waiting there were to be ready to return to the Channel bases. The formation of a base at Marseilles in anticipation of the arrival of the Indian Contingent was considered at a conference, which the D.M.S. attended on the 7th September, and Colonel

F. W. C. Jones was appointed A.D.M.S. of this new base. Four sanitary squads were also ordered to be organized at St. Nazaire from R.A.M.C. reinforcements on the 12th September as its sanitary section.

Situation at the end of the Advance.

When the Aisne was reached the medical situation on the lines of communication was consequently as follows :—

St. Nazaire ..	No. 3 General Hospital.
	No. 6 Stationary Hospital.
	No. 8 Stationary Hospital (opening).
	No. 9 Stationary Hospital (rest station duties).
	Australian Voluntary Hospital.
	No. 1 Convalescent Depôt.
	Nos. 2 and 3 Sanitary Sections.
Angers ..	No. 5 General Hospital (opening).
	No. 10 Stationary Hospital (headquarters formed railway rest station).
Nantes ..	No. 9 General Hospital.
	No. 1 Base Depôt Medical Stores.
	Nos. 2 and 3 Advanced Depôts Medical Stores being re-equipped.
Le Mans ..	No. 5 Stationary Hospital.
	No. 1 Stationary Hospital (opening).
	Convalescent Depôt.
	No. 1 Advanced Depôt Medical Stores.
	8 Sanitary squads.

No. 4 General Hospital was on its way to Versailles, and the remaining general and stationary hospitals were awaiting orders to return to the Channel bases, or were loaded on trucks for moves elsewhere. Motor ambulance cars had arrived, and the formation of motor ambulance convoys and more ambulance trains was being considered. Large hospital ships were running to St. Nazaire, and one of the cross-channel ships, the "St. Andrew," was at Nantes to take sick and wounded to St. Nazaire. Arrangements were being made for the formation of a base for Indians at Marseilles. Railway rest stations were established at the principal halting places by No. 10 Stationary Hospital and No. 3 Clearing Hospital. The 6th Division medical units were disembarked at St. Nazaire, and reinforcements for the R.A.M.C. had arrived in sufficient number to replace casualties in the field units.

CHAPTER XIII.

THE AISNE BATTLE FRONT.

ON the 12th September the British Expeditionary Force was in touch with the enemy along a front extending from Venizel, some three miles east of Soissons, to Villers-en-Prayères, some fifteen miles further east, with the French Sixth Army on its left from Soissons westwards and the French Fifth Army on its right eastwards to Reims. On the following day troops of all three corps and cavalry of the British had crossed the Aisne and occupied positions on the right bank of the river, while the French had also crossed to the right bank on both their right and left flanks. It appeared at first that the enemy was still retreating and orders were issued for the pursuit to be continued northwards. The British advanced guards crossed the Aisne against no greater resistance than encountered in the previous six days. Unfortunately the Germans were able to bring up reinforcements on the 13th and 14th, and though the British in many places reached the edge of the high ground above the Aisne, and even at one place looked down into the valley of the Ailette beyond, they were unable to dislodge the enemy from his position on the Chemin des Dames on the 16th September.

On that day orders were issued by the Commander-in-Chief for the British line on the north bank of the Aisne to be maintained and strongly entrenched in order to assume a general offensive at the first opportunity. From then onwards until the British Expeditionary Force was withdrawn from the Aisne to Flanders during the first half of October, trench warfare, which was to become its daily task on the Western front for the next four years, was commenced.

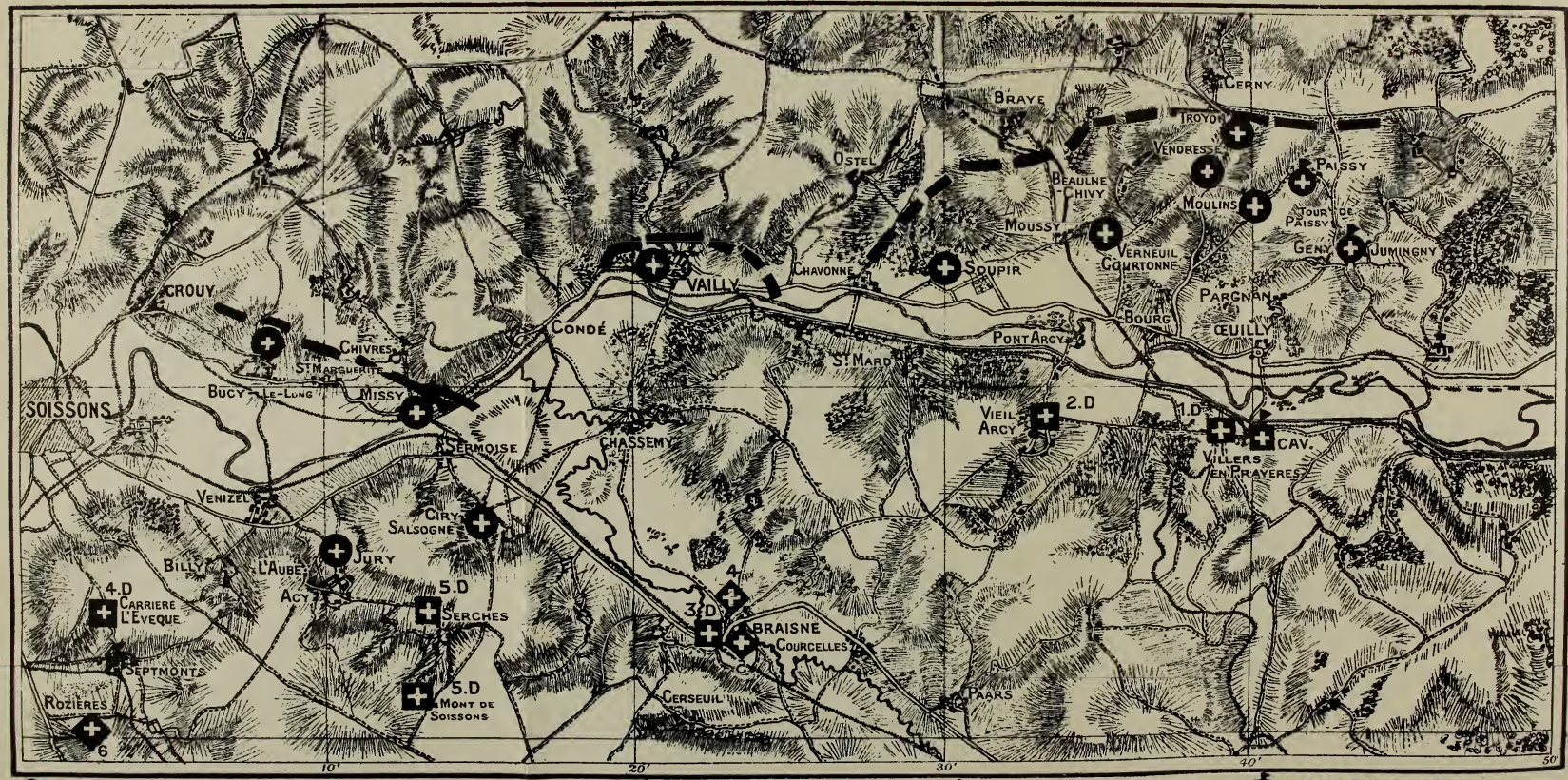
Physical Features.

The physical features of the battle front had a profound influence on the medical arrangements. The Aisne flows east and west through an open valley of marsh and meadow land, varying in width from one and a half miles, at Venizel and in the vicinity of Soissons, to 500 or 600 yards between Vailly and Chavonne in the centre of the British front. A canal joins the river about one and a half mile downstream from Vailly coming from the east along its left bank. Another

THE AISNE BATTLE FRONT

SHOWING THE MORE PERMANENT POSITIONS OF ADVANCED AND MAIN DRESSING STATIONS.

▬ = APPROXIMATE LINE OCCUPIED BY THE BRITISH.



⊕ ADVANCED DRESSING STATION. ⊞ MAIN DRESSING STATION. ◈ CLEARING HOSPITAL. ⊕ CAVALRY A.D.S. ⊞ CAVALRY M.D.S.

Nº 1 CLEARING HOSPITAL WAS AT FÈRE EN TARDENOIS TWELVE MILES SOUTH OF BRAISNE AND Nº 2 AT NEUILLY ST FRONT ELEVEN MILES SOUTH-WEST OF SEPTMONTS, WITH A DETACHMENT AT OULCHY-BRENY ELEVEN MILES SOUTH OF MONT DE SOISSONS.

1099.

Malby & Sons Lith

canal which emerges towards the Aisne valley from the north through a tunnel under the high ground between the Ailette and the Aisne connects the Aisne with the Oise and joins the Aisne canal about one mile below Villers-en-Prayères, being carried across the river by a viaduct. The Vesle, which is a comparatively narrow stream, joins the Aisne from the south-east opposite Condé, one mile below the point where the Aisne canal commences. It flows from the direction of Reims through an open valley, similar to that of the Aisne, passing the towns of Fismes, Bazoches and Braisne in its course. From the Aisne and Vesle valleys the ground rises in a series of bluffs and spurs for some 500 feet to the open plateaux of the high ground between the Aisne and Ailette on the right bank of the Aisne and between the Aisne and Vesle and the Vesle and Ourcq on the left or south bank. Numerous re-entrant valleys cut in between the salients, some fairly wide and open, but others more of the nature of ravines. A feature in these re-entrant valleys is the numerous caves quarried out of the overhanging cliffs for obtaining stone for building the houses in Soissons and the villages which nestle at the foot of the bluffs or, higher up, against the cliffs and slopes. Many of these caves had been used as out-houses of village or farm buildings and in some places as dwellings, and were much used as regimental aid posts and advanced dressing stations by the R.A.M.C. and as shelters by the troops.

The Aisne was bridged at Venizel, Missy, Condé, Vailly, Chavonne, Pont Arcy and Villers on the British front, but with the exception of those at Missy, Condé and Chavonne, and over the canal at Pont Arcy and Villers, the bridges had been damaged or destroyed when the troops reached the river. A railway bridge, crossing the Aisne from the right to the left bank between Vailly and Chavonne, was also destroyed.

Outline of the Operations.

On the 13th September the bridge at Venizel was sufficiently repaired to man-handle wheeled transport across, and by the evening a pontoon bridge was constructed close to it. This enabled the brigades of the IIIrd Corps to cross to the right bank. The 11th Brigade had already crossed over the broken girders in the early hours of the morning and occupied the spurs north of Bucy-le-Long. In the afternoon the 12th Brigade, which had also crossed in single file, assembled at Bucy and attacked in the direction of Chivres and Vregny

followed by the 10th Brigade which crossed by the pontoon bridge. The 19th Brigade remained on the south side of the river. The IInd Corps on the right of the IIIrd Corps attacked from both sides of the Vesle valley. A pontoon bridge was constructed by the 5th Division at Maison des Roches, a mile up stream from Venizel. The 14th Brigade crossed in the afternoon and got into Ste. Marguerite on the opposite bank, followed by the 15th Brigade. The 13th Brigade was to attempt a crossing from Sermoise on the south bank to Missy, but was strongly opposed. Two battalions managed to get across by rafts, but the remainder of the brigade did not get to Missy until the following day, when the pontoon bridge was brought up from Maison des Roches. The 3rd Division of the IInd Corps was operating on the east bank of the Vesle from Chassemy and Braisne. The road between these two places was heavily shelled, and the bridge at Condé was barricaded and strongly held, making it impossible for the 3rd Division to effect a crossing there. At this point of the front the British advance was definitely checked and the bridge at Condé was held by the enemy not only on the 13th September but throughout the subsequent operations on the Aisne. The 3rd Division, however, effected a crossing at Vailly. The 8th Brigade at first got over in single file by a plank thrown over the gap in the damaged road bridge, and subsequently by a pontoon bridge which the Royal Engineers constructed under heavy fire. The 9th Brigade crossed by the broken railway bridge below Vailly. These two brigades then reached the south edge of the plateau above Vailly, while the 7th Brigade remained at Braisne. The 5th Cavalry Brigade, after endeavouring to cross at Vailly, handed over the attack to the infantry and had withdrawn to Braisne. The 3rd Cavalry Brigade was left in Chassemy watching the Condé approaches. These brigades were being formed at the time into a 2nd Cavalry Division.

The 1st Cavalry Division on the 13th September had reconnoitred the crossings of the Aisne from Pont Arcy to Villers. With the support of the 1st Division of the Ist Corps it reached the north of the river, crossing by the intact bridges over the canal and by a pontoon bridge, formed at Bourg over the river, and occupied the high ground at Pargnan. It then pushed on in touch with the French on the British right. The divisions of the Ist Corps crossed at Bourg, Pont Arcy and Chavonne, the 1st Division by the unbroken canal bridge and the Oise Canal viaduct below Bourg. It pushed on with the cavalry

to Paissy and Moulins. The 5th Brigade of the 2nd Division crossed in single file by the ironwork of the broken bridge at Pont Arcy and subsequently by a pontoon bridge, which was ready by the evening, and occupied the Verneuil–Beaulne spur. The 4th Brigade crossed at Chavonne, where it met with strong opposition, but managed to get over late in the afternoon by boats and afterwards by a trestle bridge. It was withdrawn, however, to the south of the Aisne for the night. The 6th Brigade remained south of the river.

By night time on the 13th September, therefore, the 1st Cavalry Division and infantry of the Ist Corps on the British right had pushed up towards the east end of the Chemin des Dames plateau between the Ailette and the Aisne. The 1st Cavalry Division had its headquarters at Villers-en-Prayères, with its 2nd Brigade on the British right flank between it and the French, and its 1st Brigade in the vicinity of Verneuil on the left of the Ist Corps. The 1st Infantry Brigade occupied positions at Paissy, the 2nd Infantry Brigade at Moulins, and the 3rd Infantry Brigade was with the 1st Divisional Headquarters at Bourg. The 2nd Division had only one brigade, the 5th, on the north of the river, working up towards the Verneuil and Beaulne spurs. The IInd Corps was across the river east and west of the Vesle, the 8th and 9th Brigades of the 3rd Division on the spurs north of Vailly, extending their front towards Chavonne on the east and Condé on the west, and the 14th and 15th Brigades of the 5th Division in touch with the IIIrd Corps brigades in Ste. Marguerite, attacking towards Missy and Chivres from the west with the 13th Brigade across at Missy and entering Missy from the east. The brigades of the IIIrd Corps occupied Ste. Marguerite and Bucy on the British left, and were in touch with the right of the French Sixth Army. The enemy had thus a wedge between the British left and right down to the Aisne bridge at Condé. The 2nd Cavalry Division was south of the Aisne in the British centre, the 5th Cavalry Brigade at Braisne, and the 3rd at Chassemy watching this crossing.

On the 14th and 15th September an active offensive was carried on from these footholds on the north bank of the Aisne. The morning of the 14th September was very foggy, and the 1st Division and the 1st Cavalry Division managed under cover of the fog to establish themselves on a line from the cross-roads about one and a half miles north of Paissy to the sugar factory between Troyon and the Chemin des Dames and for a short distance on the Chemin des Dames plateau above

Troyon and Vendresse. Elsewhere the positions held by the British were of the nature of bridgeheads at crossings of the Aisne. The 2nd Division continued to extend its line along the high ground from Beaulne and Chivy south-west towards Moussy, the Oise canal and Soupir.

The enemy made a general attack during the day on both divisions of the Ist Corps, and there were many casualties, the brunt of the fighting falling on the 2nd Brigade of the 1st Division and the 6th Brigade of the 2nd Division, which had pushed through the 5th Brigade. During the fighting units got much mixed up in the mist, and this added to the difficulties. The left front of the 2nd Division, held by the 4th Infantry Brigade, was so hard pressed at Soupir at noon that the 1st and 2nd Cavalry Brigades were sent round to fill the gap between it and the 3rd Division, and took over many stragglers of the latter from its flank in front of Chavonne. The French troops on the right of the 1st Division also gave way at mid-day and were replaced by two regiments of the 4th Cavalry Brigade.

All brigades of the 3rd Division on the 14th September were around Vailly, the 8th and 9th Brigades having been counter-attacked on the high ground north-west of the town. The 13th Brigade continued fighting in Missy, while the 14th and 15th Brigades attacked towards Chivres, the latter getting into Missy by night time.

The 4th Division of the IIIrd Corps was supporting the attack on Chivres, but was held up on the Ste. Marguerite spur. It was also vigorously attacking to help the French on its left.

All these attacks were continued on the 15th September without any definite advance of the British line. The 1st Division attacked the enemy and drove him off near Cerny on the Chemin des Dames, while the 2nd Division continued to hold the plateau south of Ostel against many counter-attacks with the 1st and 2nd Cavalry Brigades, under orders of the Ist Corps, on the spur north-west of Chavonne, and the 4th Cavalry Brigade filling the gap between the 1st Division and the French.

The IInd Corps on the 15th September held with its 3rd Division a line south-east from Vailly and the spurs north and west of Vailly, but failed to extend its line further west towards Condé. The 5th Division held Missy and a line south of Chivres to Ste. Marguerite, but failed to occupy Chivres. The 4th Division was holding the spurs north-west and north-east of Bucy. The 19th Infantry Brigade and the 3rd and 5th

Cavalry Brigades were still south of the Aisne in observation of the German positions on the river at Condé, the 19th Infantry Brigade being in bivouacs in a wood near Venizel.

On the 16th September the British troops were ordered to entrench themselves strongly in these positions, waiting an opportunity for a further advance, and from that time onwards the fighting on the Aisne consisted mainly of artillery duels and attacks and counter-attacks on the entrenched lines, during which the 1st Cavalry Division was engaged in dismounted action, and the 2nd Cavalry Division in watching, as before, the Condé bridge from the woods south and west of Chassemy and closing the gap between the 3rd and 5th Divisions. On the 18th September, however, the 2nd Cavalry Division was withdrawn to general reserve, and the Condé bridge was then watched by troops of the 3rd Division and one battalion of the 5th Division.

The 6th Division which had landed at St. Nazaire was now arriving on the Aisne front. Its brigades were distributed to the Ist and IInd Corps—the 17th and 18th to the Ist Corps, and the 16th to the IInd Corps.

The withdrawal of the British Expeditionary Force to the Flanders front commenced on the 29th September, when the 2nd Cavalry Division began to move behind the British and French lines. The IInd Corps handed over its front on the night of the 2nd/3rd October to the Ist and IIIrd Corps, the 1st Division extending its line to the Beaulne spur, the 2nd Division to the north-east of Vailly, and the 16th Brigade of the 6th Division to the spurs on the north-west and west of Vailly, thus relieving the 3rd Division, while the 4th Division took over the front of the 5th Division in the neighbourhood of Missy and Ste. Marguerite. On the night of the 4th/5th October the 1st Cavalry Division was withdrawn and commenced moving to Flanders, its objective being Lille. The IIIrd Corps was withdrawn from the line—less the 16th Brigade of the 6th Division, which remained with the Ist Corps—on the 6th October, its front being taken over by French troops. By the 7th October, therefore, the Ist Corps only was left on the Aisne front. Its withdrawal commenced on the night of the 12th/13th October and was completed on the following nights, the last of the troops of the 1st Division getting across to the south bank of the Aisne after daylight on the 16th October. The units of the Ist Corps marched to entraining stations at Fismes, Fère-en-Tardenois and Neuilly St. Front, the 2nd Division

proceeding to Hazebrouck, where battalions of the 4th Brigade began to arrive on the 14th October, and the 1st Division to Etaples.

The Casualties.

During the whole of this period there were very few quiet days on the British front, and there was a daily toll of casualties, occasionally amounting to several hundred in one division or one brigade alone. Although no accurate statistics are available, the casualties in the 1st Division on the 14th September were reported to be between 2,000 and 3,000 killed, wounded and missing, and in the 2nd Division over 1,000. The wounds were caused chiefly by shrapnel and machine gun fire, but several casualties were caused by the heavy artillery of the Germans, who used, for the first time against the British, the 8·2–inch howitzer, with a high explosive shell weighing 200 lbs. The trenches were at first too narrow to afford much protection from shrapnel, but the positions up against the caves and cliffs of the various spurs gave a considerable amount of protection. In one instance, however, on the 25th September, a high explosive shell hit one of the caves, occupied by the headquarters of the 1st Battalion Cameron Highlanders and entombed and killed the commanding officer, the adjutant, the medical officer of the battalion, Lieutenant Crockett, R.A.M.C., and two other officers, together with the serjeant-major and twenty-two other ranks, so that even these caves were not altogether an adequate protection against the high explosive howitzer shells. The open valley and the roads leading to the bridges, and the bridges themselves were constantly under shell fire, making movements impossible across the river except at night.

There was comparatively little sickness, although at one time a considerable number of men went sick in the 14th Brigade after occupying marshy ground near Missy, and anxiety was being caused, especially in the 2nd Division, by the occurrence of several cases of enteric fever during the first week of October. The losses amongst the R.A.M.C. between the 12th September and 15th October were nine officers killed or died of wounds, seven officers wounded and four missing; thirteen other ranks killed, forty wounded, and sixteen missing.

Weather.

The weather was wet and cold during the greater part of this period, but improved after the 22nd September.

The Medical Services.

During these operations the medical services had greater opportunities for systematic methods of collecting the wounded than had been possible during the previous retreat and advance. There was little or no change in the battle front after the 15th September, and consequently main and advanced dressing stations could be established in more or less permanent positions. The main dressing stations were on the south bank of the Aisne as a rule ; at any rate it was to the south bank that all wounded had eventually to be sent for evacuation in supply column lorries to railheads. The only sheltered positions for advanced dressing stations were close to the trenches, in caves and under shelter of the ridges. They were thus in close touch and practically amalgamated with the regimental aid posts. Between them and the main dressing stations on the south bank wounded had to be taken down valleys, along roads and across bridges exposed to enemy artillery fire, in many cases under direct enemy observation. It was this dangerous and difficult gap in the line of evacuation which dominated the medical situation on the Aisne front.

The main dressing stations from right to left were at a sugar factory on the canal bank about one mile east of Villers-en-Prayères for the 1st Cavalry Division ; at Villers-en-Prayères for the 1st Division ; at L'Hôpital, a farm, on the northern outskirts of Vieil Arcy for the 2nd Division ; at Braisne for the 3rd Division ; Serches and Mont de Soissons farm for the 5th Division, and Carrière l'Eveque, a large farm with spacious quarried caves just north of Septmonts, for the 4th Division.

No. 6 Clearing Hospital was in a château at Rozières in the Septmonts valley, and also acted as a main dressing station for the 4th Division and IIIrd Corps. All these main dressing stations were some four or five miles from the battle front which cleared to them.

1st Cavalry Division.—The 1st Cavalry Division had an advanced dressing station at the Tour de Paissy, an exposed farm in the centre of the plateau south of Paissy, and another under shelter of the ridge north of Pargnan. The dressing station at Tour de Paissy was heavily shelled and was withdrawn to the neighbourhood of Jumigny. These advanced dressing stations were formed by the bearer divisions of No. 1 and No. 4 Cavalry Field Ambulances, each with two medical officers, two light and two heavy ambulance wagons. The casualties in the Cavalry Division were comparatively small, but its advanced dressing stations helped the 1st Division

field ambulances in collecting wounded from its positions on the British right north of Paissy. No. 3 Cavalry Field Ambulance was placed at the disposal of the Ist Corps when the 1st and 2nd Cavalry Brigades were temporarily placed under that command to strengthen the left of the 2nd Division at Soupir and Chavonne. It moved to Soupir under Major West on the 15th September, but came under heavy fire and retired to the south of the river and from there to Oeuilly on the right bank for the night. Major West was without orders and had to act on his own initiative. He returned to Soupir on the 16th September and was told to go forward to Chavonne, but found himself again under heavy fire and retired to the château at Soupir, where some 200 wounded, chiefly infantry, were collected. After dark he evacuated the majority of these in his ambulance wagons and other vehicles to Oeuilly, where he opened a dressing station, and on the following morning sent them across the Aisne to the main dressing station at Villers. No. 3 Cavalry Field Ambulance rejoined No. 1 and No. 4 at Villers sugar factory on the 18th September. The sugar factory at Villers was in danger from artillery fire on the 26th September, and the cavalry field ambulances moved to Merval but returned the same evening. They were eventually withdrawn to Paars on the 30th September previous to moving to Flanders. During the Aisne operations each of the three cavalry field ambulances of the 1st Cavalry Division relieved one another in turn at the advanced dressing stations and main dressing station. Colonel S. Hickson, who was A.D.M.S. of the Cavalry Division, left for duty on the lines of communication and was succeeded on the 5th October by Major Steele.

1*st Division.*—When fighting on the Aisne commenced all the field ambulances of the 1st Division crossed to Bourg, and their bearer divisions, with No. 2 in advance, took up positions in and near Vendresse. On the 14th September it was decided to bring up the tent divisions of No. 1 and No. 3 Field Ambulances to Moulins and Vendresse to form advanced dressing stations at these places, and open a divisional collecting station with the tent division of No. 2 at Villers. This was effected on the night of the 14th/15th September. A constant stream of wounded came into the advanced dressing stations during these early days. Casualties accumulated in them rapidly. The bearer division of No. 1 Field Ambulance was collecting them into caves at Paissy and Troyon, and No. 2 and No. 3 into sheltered positions along the ridges and caves in the vicinity of Vendresse and Chivy. The roads

back from these positions were constantly under fire, and the advanced dressing stations were becoming so congested that No. 2 Field Ambulance decided to send convoys of wounded away in its ambulance wagons on the morning of the 15th September. No sooner, however, had this been commenced than a high explosive shell fell near the convoy and killed two men of the R.A.M.C. and one of the patients. The horses stampeded, but four of the ambulance wagons and some 100 walking wounded got back to Villers, running the gauntlet of the shells. The difficulties and dangers with which the 1st Division Field Ambulances had to contend at this time are well illustrated by the following extracts from the diary of Lieut.-Colonel Hinge, commanding No. 1 Field Ambulance. The tent division of the field ambulance had opened a dressing station on the night of the 14th/15th at Moulins, with the bearer division in advanced dressing stations at Troyon and Paissy.

On the 14th September, Lieut.-Colonel Hinge notes :—

"At 6 p.m. received orders to march via Villers-Oeuilly over the pontoon bridges, other bridges being blown up, to Moulins and await orders. A very dark night and difficult march, many shells overhead, no lights allowed . . .

* * * *

"The night was absolutely dark with drizzling rain, and a piece of ground was found with great difficulty to park off the road on. As I was told the whole ground had been raked during the day by shell-fire and that the enemy still held their position in front, I selected a piece of ground partially sheltered on the north side. 'B' bearer sub-division sent to Vendresse, 'C' sub-division to Paissy, and I remained with 'A' section at Moulins, selecting the church there as a central dressing station."

On the 15th September :—

"At 5.30 a.m. our bivouack was shelled, artillery being in position south of us, and shells were tearing up the ground in our bivouack area. Moved at once into village at Moulins, which was rather less exposed to shrapnel. Began to fill at once, but as it was impossible owing to heavy fire to collect from Vendresse, these were collected by No. 2 Field Ambulance, who, by the way, were under fire all day. Casualties from Paissy were brought in during intervals of fire, the intervening road being raked by fire most of the day. We have been under shell and shrapnel fire all day, many narrow escapes, several ambulance wagons hit by shrapnel. Convoys of wounded sent by A.D.M.S. orders to Villers, all walking and sitting up cases first, as it seemed during the morning we could not hold position. Enemy pushed back later, and less shell-fire, but renewed a bit later . . . .

* * * *

"Rations are our great difficulty for patients; at no time since we left Boué have we failed to draw rations or half rations for R.A.M.C. personnel, but in spite of urgent indents we cannot get rations for patients. Urgently informed A.D.M.S. of this. I have tried to obtain rations from regiments, and in a few cases have been successful, but often we are nowhere near units, and this method fails us. I have a good surplus still of medical comforts, but many of the patients require food, as they have been away from their units in barns, etc., in some cases two or more days, and on the 13th instant iron rations were to be used."

On the 16th September :—

"Late last evening a large convoy of wounded was sent in from my bearer division, who are now at a small village, Troyon, near Vendresse, about one mile north of us, and two miles by road. These were sent back under cover of darkness after fire had ceased, as during the day it is under heavy fire. These again have no rations, but I am feeding them by means of vegetables and anything I can locally collect to supplement meat rations made into stews. Milk and other such supplies are impossible to obtain here, as villages are cleared out. Under the circumstances we are doing well, and all will get one good meal, and biscuits are at present plentiful. All tent sections hard at work in church and barns re-dressing wounds, many of which are already septic. Majority of wounds are from rifle and shrapnel fire. Heavy fire over village this morning. Message at 6.30 a.m. from Major Fairie in charge of bearer division, asking for every available ambulance wagon to be sent to Troyon as soon as situation permits, or when dark, to evacuate large number of further casualties. Sent off convoy of wounded, 91 cases, at 1 p.m. to Villers, where they were to be transferred to motor lorries for railhead, sent remainder of wagons to O.C. bearer division. The empty convoy from Villers did not get back here until 11 p.m. Eighty cases received at 5 p.m. from bearer division; expect remainder at dawn tomorrow, as I am sending all my transport to-night on to him."

On the 17th September :—

"No cases received yet from bearer division at Paissy, message that he cannot despatch them owing to heavy fire on road. 9.30 a.m. sent message to O.C. bearer division to send cases back at once. Intelligence Officer informs me that road is safe for transport now. Motor lorries are to come here to-day to collect all casualties. Informed later that French lorries were called for suddenly to Rheims and so cannot come. Am sending all transport to-night, 17th, to Troyon to help evacuation, after evacuating my own cases here."

On the 18th September :—

". . . . Rode over to Troyon this morning to visit bearer sub-division. They are in caves immediately below and just behind the firing line, which is only just a few hundred yards away. During the night about 140 cases had been collected. Decided to send "C" section tent sub-division there so that they can evacuate direct back to Villers, instead of sending them round to Moulins. Everyone up here is in trenches, or behind shell-proof cover. The road I came by was shelled all the morning, and I had to wait two hours, and then had a very exciting ride back with shells bursting around everywhere, portions of the road being very exposed. As cases are again collecting from Paissy on the right of our line adjoining the French, I sent a bearer sub-division out again on this side to collect cases. Report at 1 p.m. cannot return as road is constantly under shell fire. This village (Moulins) shelled to-day, church struck, and part of shell entered church. Yesterday a bomb was dropped, and one driver A.S.C. wounded of No. 1 Field Ambulance."

On the 19th September :—

"All ambulance wagons sent during night to Troyon to help evacuation of wounded, all collection being done at night. Roads are impossible during the day owing to shell-fire."

On the 20th September :—

"Have received 200 rations for patients at last. At 3 p.m. received orders to move south of river to Villers at once; there has been very heavy fire all day, and apparently G.O.C. wants all impedimenta over canal as a precautionary measure. 6.30 p.m. sent off five ambulance wagons to Moulins for Paissy from Villers, and nine to Troyon to assist evacuation of casualties. Heard that the bearer division at Moulins could not proceed further owing to heavy fire. Casualties have found their own way into Moulins. There

is, I am informed by A.D.M.S., Cavalry Division, an advanced dressing station at Paissy which is collecting all casualties on that flank. My bearer sub-division therefore remained at Moulins. Major Fairie informs me at 11 p.m. he still has at Troyon about 200 cases, mostly lying down. I am arranging to evacuate these, and have borrowed ambulance wagons from two cavalry field ambulances which are resting in this village (Villers) with Cavalry Division. This collecting can only be done at night."

On the 21st September :—

"Received from O.C. Remounts, 11 horses, very urgently needed. Our horses, owing to constant convoys, required from Troyon and Paissy, are absolutely exhausted. Motor lorries for wounded are now working between here (Villers) and railhead, and collecting from here rapidly, but the work between the bearers and tent divisions at the front comes very heavily on our own transport."

On the 22nd September :—

"Two hundred and sixty men were moved from our bearers to Villers yesterday with the help of every field ambulance wagon; about 100 or more to be moved to-night."

On the 24th September :—

"Am closing advanced dressing station at Paissy. Two bearers severely wounded there; very few casualties there now, but position has been continually shelled by enemy. Shall send up nightly ambulance wagons to remove any casualties collected in caves during day by regimental medical officers, as this is just behind the trenches and forms a good regimental aid station."

On the 26th September :—

"The road north via Oeuilly to Troyon, etc., has been continually shelled all day about half a mile north of us by heavy guns, and the road has been badly broken up. It may be impossible to-night for ambulance wagons. I am collecting casualties from Troyon, Paissy, Geny and Pargnan."

On the 28th September :—

"Every night now there is heavy firing in the trenches accompanied by tremendous heavy artillery fire lasting some hours. Convoys of ambulance wagons continue to work every evening, leave Villers at 7.30 p.m. and return in the early hours of the morning with casualties."

These experiences were typical of the work of practically all the field ambulances along the Aisne front, and many casualties occurred amongst the R.A.M.C. personnel.

The field ambulances of the 1st Division were withdrawn from the Aisne front on the 15th and 16th October. Nos. 1 and 3 left Villers on the 14th October and entrained on the 16th at Neuilly for Hazebrouck and St. Omer. No. 2 remained at Villers with bearer sub-divisions at Verneuil and Vendresse until the 16th October; it then marched to Fismes and entrained there on the 17th October and detrained at Hazebrouck. The dressing station at Villers was damaged by shell-fire just before it left.

2nd Division.—The 2nd Division field ambulances crossed the Aisne from Vieil Arcy by the pontoon bridge to Verneuil and Soupir, leaving their heavy equipment behind and establishing

a main dressing and divisional collecting station on the south bank of the river at L'Hôpital farm. Advanced dressing stations were formed at first by the bearer divisions in caves at Chivy, Beaulne and at Moussy, with tent divisions in châteaux at Soupir and Verneuil. These latter subsequently became advanced dressing stations, and the main dressing station at L'Hôpital was withdrawn on account of its exposed position to the church and houses in Vieil Arcy on the 20th September. The regimental aid posts of the 5th and 6th Infantry Brigades were then cleared to Verneuil and those of the 4th Infantry Brigade to Soupir. The wounded were kept in the regimental

Château Soupir, Aisne battle front, used as an Advanced Dressing Station.

aid posts in caves north of the dressing stations and removed by the ambulance wagons at night. When the Ist Corps extended its front westwards to take over the front of the 3rd Division on the withdrawal of the IInd Corps from the line, new dressing stations were formed in Rouge Maison farm and other positions north of Vailly. As in the case of the 1st Division the clearing of the dressing stations to the south bank of the Aisne could only take place during the night.

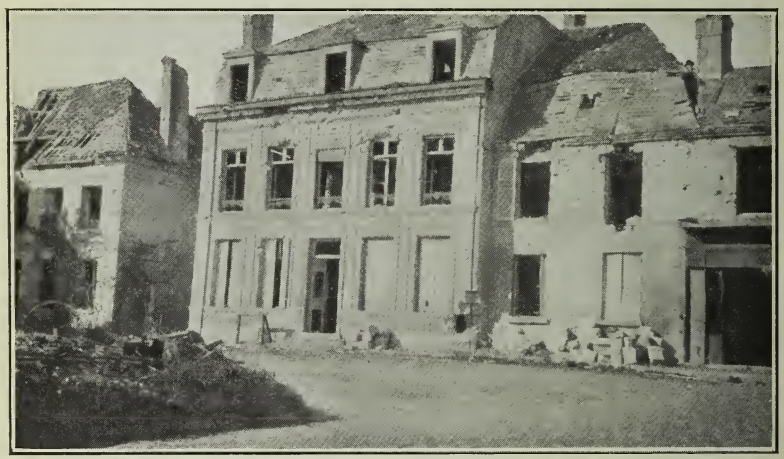
On the 14th September Colonel Dalton who, it will be remembered, had been appointed A.D.M.S. of the 2nd Division in place of Colonel Thompson, and had joined the division only five days previously, went forward to Verneuil to select a suitable place as a dressing station, and while doing so was

severely wounded in the back by a shell. He was brought to L'Hôpital and died there on the 18th September; a bitter loss to the R.A.M.C. He was succeeded by Colonel Holt, who arrived on that day at the 2nd Division headquarters from commanding No. 2 General Hospital.

On the 12th October No. 4 Field Ambulance of the 2nd Division left for Fismes and entrained there on the 13th October for Cassel. No. 5 marched to Neuilly on the 13th and entrained on the following day also for Cassel. No. 6 left on the 15th October, entrained at Fismes on the 16th October, and detrained at Strazeele.

3rd Division.—The medical units of the 3rd Division were based on Braisne, where its field ambulances formed main dressing stations. At first a dressing station was established there by No. 9 Field Ambulance in a local French hospital, but all three field ambulances opened dressing stations in or near Braisne by the 15th September. The road from Braisne to Chassemy and to the crossing of the Aisne opposite Vailly was in full observation from enemy positions about Condé, and was continuously and heavily shelled. No. 7 Field Ambulance had gone on to Chassemy, but came under severe fire there on the 14th September and lost four of the R.A.M.C. and one of the attached A.S.C. killed, and five R.A.M.C. and two A.S.C. wounded. The dressing station was then withdrawn to a position at the sugar factory near Braisne, on the road to the railway station. No. 8 Field Ambulance had also moved along the Braisne–Chassemy road on the 13th September and came under heavy shell fire about halfway. It then proceeded to the woods behind the slopes leading to the plateau between the Vesle and the Aisne, and collected wounded during the 14th September from the wooded country north-east of Chassemy. One of its medical officers was wounded and one of the men of the R.A.M.C. killed. On the 15th it, too, was withdrawn to Braisne, but had sent a detachment into Vailly to form an advanced dressing station in the village. This was relieved by two sections and a bearer sub-division of No. 9 Field Ambulance under Major Bliss on the night of the 21st September. The advanced dressing station was opened at first in the church and houses of the village, but the former was shelled on the 23rd September. Major Bliss managed to get the patients, amongst whom were several wounded civilians and children, into cellars without loss. He was relieved on the 25th September by No. 16 Field Ambulance.

Vailly was cleared nightly by the ambulance wagons of the field ambulances at Braisne. They were sent up to the river after dusk each evening from Braisne and returned with sick and wounded early in the morning. In doing so it was on some occasions the practice to keep the convoy at Vailly until all the wagons were loaded, thus exposing patients and horses to unnecessary risks for hours. On other occasions, however, the correct practice was adopted of sending back each wagon as soon as it was loaded. The wagons halted on the south side of the Aisne in a deep cutting on the road down to the bridge, where there was some shelter from shelling



Buildings in Vailly-sur-Aisne used as an Advanced Dressing Station.

by a high bank on the west side of the road. The advanced dressing station to which the wounded were collected was in a doctor's house and school in Vailly, and the patients were carried down from it by the stretcher bearers so as to reach the river as nearly as possible at the time of the expected arrival of the wagons. The bearers had to cross the bridge at the double, starting directly after a shell burst so as to get across in the interval. The distance from the advanced dressing station to the bridge was about a mile.

As mentioned below, Braisne became the chief centre of evacuation from the Aisne front, and the A.D.M.S. of the 3rd Division was made responsible for the arrangements there. When clearing hospitals arrived they took over the buildings occupied by the field ambulances, and the latter had to seek

accommodation elsewhere. They formed a railway station party and opened dressing stations near Braisne for sick and wounded from the artillery positions in the vicinity, No. 9 Field Ambulance proceeding for this purpose to Courcelles, two miles east of Braisne.

The field ambulances of the 3rd Division left the Aisne front on the 2nd October, entraining at Longeuil Ste. Marie, and at Le Meux on the 6th October. No. 7 and No. 9 detrained at Abbeville, and No. 8 at Noyelles-sur-Mer.

2nd Cavalry Division.—The cavalry field ambulances of the 2nd Cavalry Division were No. 2 and No. 5, but the division had no A.D.M.S. until the 22nd September, when Major Goodwin was appointed to it from No. 4 Cavalry Field Ambulance. No. 2 Cavalry Field Ambulance on the 14th September marched out from Chassemy with a view to crossing the Aisne at Vailly, but the bridge was shelled and the ambulance could not get across. It returned to the château at Chassemy, where it was again heavily shelled, three of its personnel being wounded, 12 horses killed and a heavy ambulance wagon destroyed. It was with No. 7 Field Ambulance in Chassemy when the latter was also shelled and suffered casualties. No. 2 Cavalry Field Ambulance was then withdrawn to Braisne and remained there helping the clearing hospitals. It left Braisne for the Flanders front on the 29th September.

No. 5 Cavalry Field Ambulance was at Ciry, on the west side of the Vesle, on the 13th September, but in the forenoon Ciry was reported to be unsafe and the ambulance left for Serches. On reaching the top of the hill on the road to Serches it came under heavy shell-fire; Captain Forrest, R.A.M.C., was killed and Lieutenant Wyler and one man, R.A.M.C., wounded. The casualties were taken into a quarried cave and eventually brought to the main dressing station at Mont de Soissons farm. After handing over its casualties there No. 5 Cavalry Field Ambulance moved to Braisne. On the following day, the 14th September, it followed the 5th Cavalry Brigade towards Vailly, but had to retire behind Chassemy and go back to Braisne. It then went into billets at Cerseuil, on the left bank of the Vesle, south of Braisne, where it remained until the 30th September. It then left for the Flanders front.

5th Division.—When the 5th Division attacked on the Aisne, on the 13th September, the bearer division of No. 3 Field Ambulance opened a dressing station at Serches, a village in a well-protected position near the head of a re-entrant valley

running south-east from Venizel. No. 14 Field Ambulance bearer division moved further down this valley to Jury, a village much more exposed, however, than Serches, while No. 15 Field Ambulance remained on the high ground south of and above Serches at Mont de Soissons farm. The general scheme then was for the dressing station at Serches to act as a divisional collecting station, to which all sick and wounded received into the dressing stations at Jury and Mont de Soissons farm were to be sent, and from which they would be evacuated by motor lorries to railhead. As the lorries, however, had their rendezvous on the high ground near Mont de Soissons, the dressing station there became the divisional collecting station after the 15th September in order to avoid the steep hill into and back from Serches. Attempts were made to open advanced dressing stations in Ciry and Missy but the roads and bridges were constantly under fire, and it was only with difficulty that wounded could be brought back from these places.

On the night of the 14th/15th September, Major Butler and "C" section of No. 15 Field Ambulance crossed to Missy with six ambulance wagons. Owing to shell-fire he was unable to get back until the 16th September, when he returned after evacuating all the wounded. The work was dangerous and difficult, as his section was in the centre of an area constantly subjected to shell-fire. There were fortunately, however, no casualties. The Roman Catholic chaplain of the unit, Monsignor Bickerstaffe-Drew, went with Major Butler to Missy as a volunteer. No. 13 Field Ambulance collected wounded from Ciry. The bearers of No. 14 worked across the Aisne towards Missy from the west and brought back wounded to an advanced dressing station on the south bank at the main road about one and a half miles in advance of Jury. On the 25th September the dressing station at Jury was in danger of being shelled and No. 14 Field Ambulance was withdrawn to Serches. On the 1st October the field ambulances of the 5th Division were withdrawn from the Aisne front previous to entraining for Flanders.

They left Serches and Mont de Soissons farm on that date, No. 13 entraining at Longeuil Ste. Marie, No. 14 at Pont St. Maxence on the 8th October, and No. 15 at Le Meux on the 7th. They detrained at Noyelles-sur Mer, Abbeville and Pont Remy.

4th Division.—The field ambulances of the 4th Division on the British left worked from Bucy and Ste. Marguerite to Venizel

and Billy, crossing the Aisne by the bridge at Venizel. Advanced dressing stations were formed in Bucy, Ste. Marguerite and Venizel; in Bucy by No. 10 Field Ambulance, in Ste. Marguerite by No. 11, and in Venizel by No. 12. There was difficulty in getting the ambulance wagons across the bridge, and consequently they were massed at Venizel and Billy, although a few were man-handled across the river to Bucy. The advanced dressing station at Bucy was at first in a girls' school, but it was heavily shelled on the 17th and the dressing station was then moved to Le Moncel under cover of the ridge north-north-east of the village. The main dressing and divisional collecting station for the division was opened at first at Septmonts, to which a main road leads over the high ground from Venizel and Billy. The enemy's shells were, however, searching the Septmonts valley and the tent divisions of the field ambulances were moved to the Carrière l'Eveque farm. The quarried caves there, which had been used as coach houses, granaries, stables and other out-houses of the farm, were very extensive and gave excellent shelter.

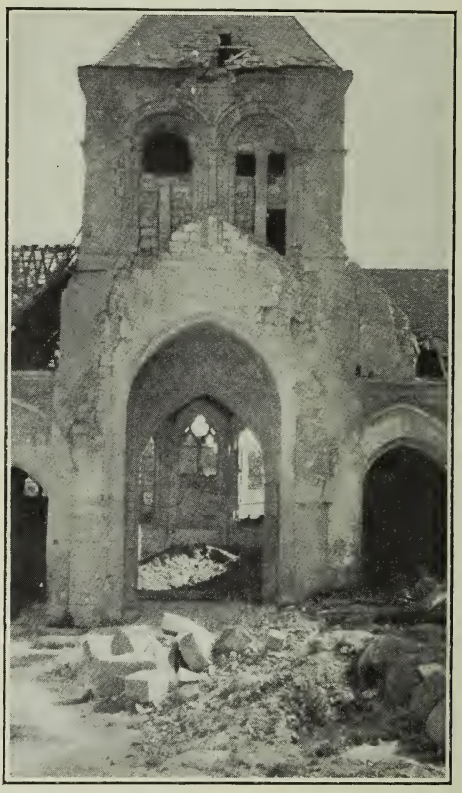
It will be remembered, that the personnel of *No. 6 Clearing Hospital*, under Lieut.-Colonel B. Forde, had been ordered to proceed to the IIIrd Corps as reinforcements. Instead of his personnel being distributed as such, however, he was ordered by the corps commander to take over a French auxiliary hospital in the château at Rozières, a village on the south side of the Septmonts valley. With the equipment of the hospital and some equipment from the field ambulance of the 4th Division he established himself there as No. 6 Clearing Hospital, although strictly speaking his function was that of a main dressing station from which sick and wounded were evacuated to clearing hospitals at railheads further back. He remained there until the 6th October, when the unit was withdrawn to Oulchy.

On the 8th October the field ambulances of the 4th Division were withdrawn from the Aisne front, No. 10 to Septmonts, No. 11 to Buzancy and No. 12 to Hartennes. They handed over their dressing stations to the French.

No. 10 Field Ambulance evacuated the dressing stations at Bucy and Missy on the 7th October and took over the main dressing station of No. 6 Clearing Hospital at Rozières. It left Rozières on the following day and marched to Longeuil Ste. Marie, entraining there on the 8th October for St. Omer. The other two field ambulances of the 4th Division, Nos. 11 and 12, left Carrière l'Eveque on the 6th October, the former

entraining at Estrées St. Denis and the latter at Pont St. Maxence on the 11th October. They detrained at St. Omer and Arques on the following day.

6th Division.—The field ambulances of the 6th Division were Nos. 16, 17 and 18. No. 16 arrived at Braisne on the 21st September and was attached to the 3rd Division. It took



The Church, Sermoise, on the Aisne Front, used as an Advanced Dressing Station.

its turn in the dressing stations at Braisne and in clearing from Vailly, taking over the advanced dressing station at Vailly from No. 9 Field Ambulance on the 24th September, where it was severely shelled on the 9th October. The headquarters of the ambulance remained at Braisne until the 12th October. Nos. 17 and 18 Field Ambulances were in reserve throughout the battle. The former arrived at Paars

and was billeted there, receiving sick of the division until the 30th September. The latter reached Mont Notre Dame on the 19th September and went to Bazoches on the following day, where it remained until the 2nd October. It was then transferred to Jury, on the left of the British front, until the 5th October, when it left for Flanders.

No. 17 Field Ambulance entrained at Pont St. Maxence on the 10th October and detrained at St. Omer on the 11th October. No. 18 entrained at Estrées St. Denis on the 10th, detraining at Landrecques on the 11th October. No. 16 Field Ambulance entrained at Fismes on the following day, and detrained at Cassel on the 14th October.

Army and Corps Troops.—No. 19 Field Ambulance went with the 19th Brigade to the neighbourhood of Billy on the 14th September, and camped on the north of the main road near Venizel. It was shelled badly there and had to withdraw its personnel to the shelter of the woods and caves near the top of the hill on the south side of the road. The personnel returned after dark to their original position north of the Soissons–Sermoise main road and bivouacked with the brigade. On the following day the men and horses were again put in shelter until dark, when the field ambulance retired along the Acy road to L'Aube, at the foot of the valley below Acy. The 19th Brigade moved from the woods at Venizel to Septmonts on the night of the 20th September, and No. 19 Field Ambulance followed it to that place, clearing its sick and wounded to No. 6 Clearing Hospital at Rozières.

During the operations on the Aisne the Ist and IIIrd Corps were at first without a D.D.M.S. Colonel N. Ferguson joined the former as D.D.M.S. on the 16th September, and Colonel O'Keeffe the latter on the 19th September.

The methods adopted for evacuating the wounded from the field ambulances are detailed in the next chapter. Motor ambulance cars were used for the first time in the front areas, and the necessity, expressed several years previously, of allotting special transport to the medical services for bringing the wounded to clearing hospitals and railheads, was at last recognised.

CHAPTER XIV.

EVACUATION OF CASUALTIES AND MEDICAL SERVICES ON THE LINES OF COMMUNICATION DURING OPERATIONS ON THE AISNE.

THE clearing of the regimental aid posts and advanced dressing stations to the main dressing stations south of the Aisne, described in the previous chapter, was carried out by the horsed ambulance wagons of the field ambulances. The continuous journeys to and fro told heavily on the horses, especially on those of the 1st Division, where the casualties and distances were greatest. It will be remembered that Sir Douglas Haig had been making enquiries on the 7th September with a view to their being replaced by motor ambulance cars, but certain objections to this were raised by the experience of the field ambulances in forward positions on the Aisne. The roads were much cut up by rain and shells, and for safety the ambulance wagons were drawn off the road into the fields, from the deep mud of which they were only extricated with difficulty. Motor ambulance cars in a similar situation would probably have remained permanently bogged. At least so it was thought. The French on the British right, however, were employing motor ambulance cars and buses, and they were asked to come to the assistance of the 1st Division field ambulances on the 15th September. Twenty buses and ten motor ambulance cars were lent on the 16th and 17th September, the motor ambulance cars crossing the Aisne and helping to clear wounded from the neighbourhood of Chivy on the 16th September. They were, however, withdrawn on the 17th September, as the French motor transport was urgently required at Reims.

The sick and wounded were cleared from the main dressing stations to Braisne, Fère-en-Tardenois, Oulchy-Breny and Neuilly St. Front, chiefly by the lorries of the supply columns returning to railheads. Bazoches was also used for the first day or two of the battle for clearing field ambulances passing through it on their way to the Aisne. The suitability or otherwise of this form of transport depended on the manner in which the lorries were prepared for wounded at the point of departure. Unless careful attention had been paid to this,

complaints of jolting, discomfort and pain were frequent. On the other hand, Major McMunn, who took command of No. 4 Cavalry Field Ambulance on Major Goodwin's appointment as A.D.M.S. of the 2nd Cavalry Division, found that bundles of compressed hay and straw, put into the lorries, made excellent bedding for the transport of serious cases, and that when the lorries were prepared in this way the wounded were brought in comfort to railhead. On the whole, however, the motor lorries of the supply columns, although they lessened the time of the journey back, were unsatisfactory and unsuitable. Their destination and return were determined by factors quite unrelated to the evacuation of wounded, and this, as well as the interference with supply services, made it very difficult to have wounded ready at the point of departure at the right moment.

During September the War Office was not only sending out large numbers of cars with ambulance bodies, but the D.D.G.A.M.S. was urging Surg.-General Woodhouse to form motor ambulance convoys to work at the front. On the 14th September G.H.Q. was also urging him to send up motor ambulance cars from the L. of C. to clear the field ambulances to clearing hospitals and railheads. It was suggested that six motor ambulance cars should be attached to each divisional supply column for this purpose. This number, however, was not sent up at first, but on the 16th September Surg.-General Woodhouse sent motor ambulance cars to G.H.Q. as a temporary measure to be allotted in the proportion of two to the supply column of each division and cavalry division with eight more to be attached to the mechanical transport at G.H.Q. Fourteen of these arrived on the 19th September at Fère-en-Tardenois and were distributed in the proportion of four to each Army Corps. Five additional motor ambulance cars were sent from the L. of C. to G.H.Q. on the same day.

The Formation of Motor Ambulance Convoys.

On the 24th September arrangements for an advance from the Aisne were discussed at G.H.Q. and the medical services were told to prepare a scheme. The Q.M.G. in connexion with these arrangements definitely decided that the use of returning supply lorries for the transport of wounded must finally cease, and it became necessary then to organize in their place ambulance convoys, which would be absolutely at the disposal of the medical services. Consequently a telegram was sent

to the D.M.S. ordering all motor ambulance cars on the L. of C. to be sent to G.H.Q. at once, and for local arrangements to be made for the conveyance of patients to the hospitals on the L. of C. in their place. Four days later arrangements were made with the Ford works at Paris to have fifty cars fitted with ambulance bodies there, and it was decided that fifteen ambulance cars should be allotted to each division and ten to each cavalry division, with a second echelon of motor ambulance convoys working under the control of G.H.Q., the Army Corps, or the clearing hospitals.

This was the origin of the motor ambulance convoys. Major P. Evans, who was then doing duty in No. 6 Clearing Hospital, was brought to G.H.Q. to organize them. Each convoy was to consist of fifty motor ambulance cars, three lorries, two motor cars, and one motor cycle, with three officers of the R.A.M.C., one officer of the A.S.C., fourteen R.A.M.C. other ranks, and 120 A.S.C. drivers and mechanics. On the 3rd October the War Office informed G.H.Q. that a total of 200 ambulance cars would arrive within the next week or two, so that with the fifty cars sent over at the beginning of September and those subsequently arriving from the War Office, there was material in France for forming more than one convoy.

The first convoy, which became No. 1 Motor Ambulance Convoy, was formed on the 28th September under the command of Major Evans from the motor ambulance cars which had arrived at Nantes from the War Office on the 11th September and were, as noted above, arriving at G.H.Q. on the 19th. Major Evans, after forming No. 1 Motor Ambulance Convoy and handing over the command to Captain Dwyer, was appointed to direct the organization and administration of new convoys ; and on the 5th October he was sent to Paris to form a second convoy from cars which were being collected there by the British Red Cross Society.

When No. 1 Motor Ambulance Convoy was first formed four of its cars had already been distributed, as noted above, to each of the three corps ; four were placed at the disposal of the clearing hospitals at Braisne, and one was given to each of the cavalry divisions, leaving thirty-two at G.H.Q. under Captain Dwyer.

No. 2 Convoy, which was then formed in Paris, was of a heterogeneous character, as it consisted chiefly of touring cars with drivers of several nationalities. There were only twenty cars with ambulance bodies, thirty were large touring cars, and

there were two lorries and two brake vans for the staff. Much assistance was given at this time by Mr. Robert Bacon, of the American Red Cross Society, and by Dr. Gros in lending a very efficient detachment of drivers and also some ambulance cars. Captain Kelly, R.A.M.C., was placed in command of this convoy. It arrived in Abbeville on the 9th October, but was not used on the Aisne front, its first work being with the IInd Corps after it had moved to the Flanders front. It was eventually standardized in November 1915, and there is a note by the D.D.M.S. of the Ist Corps on the Aisne to the effect that on the 13th October he sent one of the Wolseley cars of No. 1 Motor Ambulance Convoy to Paris as a model for the Red Cross Society to follow.

Other convoys were organized later, but did not come into use while the British troops were on the Aisne front; No. 3 being made up of War Office cars, No. 4 of B.R.C.S. cars, while No. 5 was formed in England by Captain du Cros, M.P., who went to France with it. Captain du Cros had offered this convoy early in September to the War Office for work between the field ambulances and railhead, and the D.M.S. was informed of the offer in a letter from the D.D.G.A.M.S. on the 9th September and again on the 15th September. Surg.-General Woodhouse finally telegraphed to the War Office accepting it on the 25th September.

Motor ambulance cars were thus at the disposal of the D.Ds.M.S. of corps from the 20th September 1914, and were employed in removing the seriously wounded to clearing hospitals. The empty supply lorries, however, continued to be employed for taking back sick and wounded able to sit up. They were in fact used for this purpose to the end of the war at times of pressure when the motor ambulance cars were fully occupied in carrying the more serious cases.

A light railway from Soissons to Oulchy-Breny along the Septmonts valley was repaired by the 28th September. It was used for clearing from Rozières and Septmonts to Oulchy-Breny from the 30th September onwards. During the battle, therefore, motor lorries of supply columns, motor buses and ambulance cars of the French army, British motor ambulance cars and light railway transport were used for clearing the field ambulances. In addition to these the American and British Red Cross Societies sent touring and other cars to the Aisne front occasionally from Paris with medical comforts and other stores, and took back a few sick and wounded on their return journey.

The Clearing Hospitals.

Fère-en-Tardenois was the railhead for the Ist Corps and 1st Cavalry Division, Oulchy-Breny for the IInd Corps and 2nd Cavalry Division, and Neuilly St. Front for the IIIrd Corps. Braisne, although not a railhead for supplies, became, however the chief centre to which the field ambulances of all formations east of the Vesle and to some extent those of the 5th Division west of that river were cleared. It was at the apex of a triangle, whose base was formed by the front line from Vailly to Paissy. The roads from the main dressing stations at Villers and Vieil Arcy and from Vailly converged at Braisne, and roads led from it to the railheads at Fère-en-Tardenois and Oulchy-Breny. It was a fairly large town, with many commodious buildings and a civil hospital. Ambulance trains could be brought up to it, as it seemed to be just out of range of the enemy artillery; although it was eventually severely shelled for the first time on the 15th October, just as the last of the British were being withdrawn from the Aisne. Supply column lorries in passing through Braisne could unload sick and wounded there without much loss of time on their way from the Ist Corps to Fère-en-Tardenois, and, when the 5th Division had motor ambulance cars allotted to it on the 20th September, it was an easy matter to send the serious cases from Mont de Soissons farm and Serches to Braisne, a distance of four or five miles only, or about half the length of the journey to the divisional railhead at Oulchy-Breny. Braisne was consequently in the best strategical position for evacuating the casualties of the greater part of the Aisne front. Bazoches which was some five miles further down the line was used during the first four days of the battle, and then more by mistake than by intention.

With the exception of Bazoches, clearing hospitals were brought to all places where sick and wounded were entrained. No. 1 Clearing Hospital arrived at Fère-en-Tardenois and No. 2 at Neuilly St. Front on the 13th September, No. 4 arrived at Braisne and No. 5 at Fère-en-Tardenois on the 17th September. The last was moved by road to Braisne on the 24th September. No. 6, as mentioned already, was with the IIIrd Corps at Rozières château acting as a main dressing station and clearing to Neuilly St. Front, and, after the light railway was opened, to Oulchy-Breny.

After the arrival of the clearing hospitals at Braisne the A.D.M.S. of the 3rd Division, Colonel C. C. Reilly, was made responsible for the arrangements there for evacuating the sick and wounded to ambulance trains.

In Braisne, No. 4 Clearing Hospital took over the French civil hospital and adjoining buildings from No. 9 Field Ambulance, in addition to a large church, and applied to the B.R.C.S. in Paris to send hospital clothing, comforts and disinfectants as soon as possible. Two of the officers and a detachment of the unit were still at Villeneuve St. Georges with some of the stores. A telegram was sent for them to rejoin as soon as possible. On the 21st September, another building, the "hat factory," was taken over in order to expand the hospital accommodation. On the 29th September the clearing hospital opened a hospital for officers in a house with a fine garden. During this time No. 4 Clearing Hospital was kept hard at work day and night, assisted by men from the section of No. 19 Field Ambulance, which had remained with the Ist Corps headquarters, and by medical officers from the ambulances of the 3rd Division and the 2nd Cavalry Division. Numbers of French and German as well as British wounded were brought to Braisne on the 13th and 14th September, and were cleared to railheads in motor lorries, as the first ambulance train did not come up to Braisne till the 15th September. Amongst the captured Germans were a medical officer, Stabsarzt Kissing, and twelve stretcher bearers. They were placed in charge of German wounded in the town hospital and did good work there until they were sent to the base. Additional medical officers also joined as reinforcements from the base and the detachment from Villeneuve St. Georges rejoined on the 24th September.

No. 5 Clearing Hospital arrived in Braisne on the 24th September from Fère-en-Tardenois. It then took over the hat factory from No. 4, together with a hotel and house in the main street.

A small detachment of No. 20 Field Ambulance under Captain Pascoe had arrived at Fère-en-Tardenois on the afternoon of the 13th September, and opened an aid post and reception station at the railway station, which was about a mile from the town. The remainder of the unit arrived the following day and opened a hospital in the church and some barns adjoining it. No. 1 Clearing Hospital also arrived at Fère-en-Tardenois on the 13th September and opened in a house and large granary near the railway station. No. 5 Clearing Hospital arrived on the 17th September and took over the town hospital from No. 20 Field Ambulance, but, when it left for Braisne, the field ambulance shared with No. 1 Clearing Hospital the various buildings used as hospitals. No French

doctors had been left in the town, and the field ambulance consequently took over a French hospital with its civilian patients.

No. 2 Clearing Hospital arrived at Neuilly St. Front on the 13th September. It opened in a large shed at the railway station, but was ordered by the D.D.M.S., G.H.Q., to send a detachment of two officers and thirteen other ranks to form a similar railway aid post and reception station at Oulchy-Breny on the following day, as well as to detail two more officers and two men for duty with supply columns. This clearing hospital was still further denuded by being ordered to send one officer and seven men to Braisne on the 15th September and four more men to Oulchy. With its denuded personnel the work of No. 2 Clearing Hospital at Neuilly was specially severe. It was receiving most of the sick and wounded from the area west of the Vesle and from No. 6 Clearing Hospital. In addition to these duties, large reinforcements were arriving constantly at Neuilly St. Front and the conditions were becoming extremely insanitary. Lieut.-Colonel F. G. Morgan, who was in command of No. 2 Clearing Hospital, had consequently to undertake with his personnel the sanitary duties of the railhead, until the arrival of a sanitary squad on the 24th September. The sanitary squad was, however, transferred to Braisne two days later, when the detachment of No. 2 Clearing Hospital, which had been sent to Braisne on the 15th September, rejoined.

There is no record of the work at Oulchy-Breny, but it was less severe than at other railheads in consequence of the casualties of the 3rd Division, and to some extent of the 5th Division, which would normally have gone in supply columns to Oulchy, being cleared to Braisne.

No. 3 Clearing Hospital did not open on the Aisne front. It was moved from Le Mans to Villeneuve Triage on the 22nd September to take over the railway aid post and refreshment station from the detachment of No. 2 Clearing Hospital and enable the latter to join its unit at Neuilly St. Front. It was employed in receiving patients from ambulance and other trains passing through the regulating station.

Evacuation of Sick and Wounded from the Railheads.

From Braisne, Bazoches, Fère-en-Tardenois, Oulchy and Neuilly, sick and wounded were sent to hospitals on the lines of communication by railway. By far the greatest

number were sent from Braisne. Thus, during one week between the 15th and 23rd September the numbers evacuated were :—

136	Officers and	4,553	other ranks	from Braisne.
61	,,	1,250	,,	,, Fère-en-Tardenois.
22	,,	1,239	,,	,, Neuilly.
25	,,	957	,,	,, Oulchy.

Thirty-four officers and 1,020 other ranks of this total of 244 officers and 7,999 other ranks were cases of sickness, the others were wounded.

The method of evacuation by rail from the Aisne front was by ambulance train, troop train, ordinary passenger train and supply train, whichever was available at the time. The following record of evacuation from Braisne was kept by the A.D.M.S. of the 3rd Division and illustrates this :—

Table showing Evacuation of Casualties from Braisne.

Date.	Numbers Evacuated.	Transport.	Remarks.
14th Sept. ..	124	Motor lorries to Fère-en-Tardenois.	British 71, including 10 officers; French 21; German 32.
15th Sept. ..	328	Ambulance train ..	8 officers and 320 others.
16th Sept. ..	47	Troop train	—
17th Sept. ..	224	Ambulance train ..	—
,, ..	286	Motor lorries to Fère-en-Tardenois.	—
18th Sept. ..	645	Ambulance trains (2) ..	Including 36 officers.
,, ..	385	Troop trains (2).. ..	Including 1 officer.
19th Sept. ..	134	Ambulance train ..	Including 1 officer.
,, ..	312	Troop trains (2).. ..	Including 1 officer.
20th Sept. ..	121	Ambulance train ..	Including 8 officers.
,, ..	204	Troop train	—
,, ..	362	French ambulance train	Including 10 officers.
21st Sept. ..	631	Troop trains (2) ..	Including 1 officer.
22nd Sept. ..	406	Ambulance train ..	British, 44 officers, 334 other ranks; French 1; German 27.
,, ..	11	Motor cars to Paris ..	3 officers and 8 others.
23rd Sept. ..	189	Ambulance train ..	7 officers and 182 others.
24th Sept. ..	364	Ambulance trains (2) ..	British, 3 officers, 343 men; French 11; German 6.
,, ..	122	Troop train	Including 4 Germans.
25th Sept. ..	187	Ambulance train ..	British, 2 officers, 178 men; French 3; German 4.
26th Sept. ..	140	Ambulance train ..	British, 2 officers, 104 men; French 3; German 31.
,, ..	47	Red Cross cars to Paris..	4 officers, 43 men.
27th Sept. ..	241	Ambulance train ..	Includes 6 officers, and 1 German.
29th Sept. ..	280	Ambulance train ..	British, 13 officers, 262 men; German 5.

The number of ambulance trains was obviously insufficient. A standing order had been issued by the Adjutant-General on the 4th September regulating the running of ambulance trains. An ambulance train was to be despatched every morning from the advanced regulating station to a destination which would be telegraphed to the Assistant Director of Railway Transports by the Adjutant-General, and the A.D.R.T. would notify the time of departure, destination and probable time

of arrival to each of the corps, the cavalry divisions and G.H.Q. Had the number of casualties been limited to what one ambulance train could evacuate daily this would have sufficed ; but as there were only six, or at most seven, ambulance trains available at the time of the Aisne battle, and as the journey from the front to the base and back took at least four days, and sometimes more, only one ambulance train could be counted on to arrive at the Aisne front daily. Even with a carrying capacity of 300 or more in each it would have been impossible to avoid a serious congestion of sick and wounded at railheads unless every other available means were employed for sending them down the line.

This was specially felt at Neuilly St. Front, where wounded were evacuated by ambulance train only on the 13th, 15th, 17th and 24th September. Every endeavour was made by Lieut.-Colonel Morgan to obtain more trains, and it was only on account of the overwhelming accumulation of wounded urgently in need of hospital treatment that the supply trains were used by him. Sick and wounded were sent down in them practically every day from Neuilly, as many as fifteen of these trains going back with casualties in greater or smaller numbers up to the end of September. There were no medical officers with No. 2 Clearing Hospital who could be spared to accompany them, but Colonel Morgan continued to denude his hospital of personnel in order to send N.C.Os. and orderlies with each train. The patients were made as comfortable as possible with straw, stretchers, blankets and medical comforts, but there was a limit at that time to the number of stretchers and blankets the clearing hospital could spare.

At other railheads, and especially at Braisne, the work of evacuating sick and wounded appears to have been carried on smoothly and well, but at Bazoches great confusion and difficulty arose from the absence of any medical unit there to which wounded could be handed over previous to entraining. Field ambulances were at Bazoches on their way to the Aisne on the night of the 13th/14th September. The sick and wounded in them were cleared to an ambulance train which had been sent there on the morning of the 14th September. It was evidently not intended that ambulance trains should load there afterwards, but the A.D.M.S. of the 1st Division had been told by Ist Corps headquarters staff that there would be an ambulance train at Bazoches on the evening of the 14th September, and he appears to have taken it for granted that it was to Bazoches that ambulance trains were being sent.

Consequently he had ordered the main dressing station at Villers to retain the wounded until the motor lorries came to remove them to Bazoches, and he also sent there with their loads of wounded the French motor buses and ambulance cars lent to him on the 16th.

The result of this is graphically described by Major Myles, who was in command of No. 2 Ambulance Train. He had been sent on hurriedly to Bazoches from Fère-en-Tardenois to take on board all sick and wounded, whom the D.D.M.S. at G.H.Q. heard to his dismay were being sent to Bazoches. He arrived at 7.15 p.m. on the 16th September in darkness and rain. His account of what happened then goes on as follows :—

" Found one medical officer who told me he had just arrived and found the road blocked with supply wagons (lorries) full of wounded to the number of about 400. There was no siding and no one to help loading, so I had to rely on train staff. With only 45 men and two officers we began at once to get the wounded out of the supply column. The weather conditions were very bad, rain very heavy, wind strong, road swimming in mud and blocked with motor transport, which could not get out as we unloaded, for No. 2 Ambulance Train blocked the level crossing. In addition the platform of the station was very short, so that the stretchers had to be carried down the permanent way and loaded up six feet into the floor of wagons, not to mention signal wire and catch points which entangled our feet. By midnight we had made good progress and were being hustled by the O.C. Supply Column, who said he must get away to draw supplies for the 1st Division. (His railhead was at Fère-en-Tardenois.) A French cavalry brigade now came along and caused great confusion and almost completely blocked the road. At 12.30 a.m. (on the 17th September) a French orderly reported the arrival of about 200 British wounded in French motor ambulances and said he must put them out on the roadside as the motor ambulances were urgently required. I prevailed upon him to wait for a while. The confusion was now very great, roads very bad and it was raining heavily. At 1 a.m. No. 4 Clearing Hospital *en route* for Braisne and held up on line about six miles away now came along and helped us. They were much needed, for the patients on the train were clamouring and my staff were almost exhausted from heavy work and numerous demands on them."

By 2 a.m. all stretcher cases were out of the ambulance cars and supply column lorries.

" Another 170 seriously wounded men remained who could walk with help. I found an empty train of 1st and 2nd class corridor coaches about a mile down the line, where it came from no one seemed to know, and the *Chef de Gare* said I might use it. I got it as near the station as possible and helped the remaining 170 cases down to it over the permanent way." At 3.30 a.m. " Motor ambulances and supply wagons now empty and No. 2 Ambulance Train containing all stretcher cases, and all who could walk or be carried on two-handed seats in the train I commandeered. Told driver of second train to follow me at as quick an interval as possible. I could not spare a medical officer for the train, neither could I ration it. I may say that it followed me at an interval of twenty minutes all the way to St. Nazaire."

This account of evacuation of sick and wounded from the Aisne railheads exemplifies the confusion that is bound to arise in the absence of clear and precise instructions defining

the exact places of entrainment for each corps and division, and establishing at each a suitable proportion of clearing hospitals and railway aid post detachments. The D.D.M.S., G.H.Q., issued a definite instruction on the 16th September for the 1st Division main dressing station to clear to Braisne, but it was too late to prevent the convoys arriving there that night.

The situation created by the successful advance to the Aisne led to the re-opening of the Channel bases, although St. Nazaire and Nantes also continued throughout the whole period of the battle to be bases to which the ambulance trains brought sick and wounded. The number of ambulance trains was increased. No. 5 was detached from No. 4 on the 12th September at Le Mans and formed into a separate unit consisting of three *fourgons de marchandise* and nine *wagon lit* coaches for patients, with other coaches and *fourgons* for the staff, kitchen, stores and other requirements. The number of coaches for patients was increased towards the end of September by the addition of 1st and 2nd class carriages. The staff was a mixed British and French staff of one medical officer and twenty other ranks French, and three medical officers and forty-seven other ranks British, under the command of Major Dennis, R.A.M.C. The Franco-British train became No. 6 Ambulance Train, Major Adye-Curran, and afterwards Lieut.-Colonel Brazier Creagh, a retired officer, taking over command from Major Moore, who had been appointed to direct the organization of ambulance trains. No. 7 Ambulance Train was formed at Villeneuve St. Georges for its first journey on the 17th September under the command of Major Watts; No. 8 was formed at Villeneuve of 1st and 2nd class carriages and *fourgons* under Major Beatty with personnel from No. 6 General Hospital at the end of September, and was ready on the 7th October. There were thus eight ambulance trains running by the time the British were withdrawn to the Flanders front.

On the 24th September Sir John French issued instructions to have all ambulance trains converted into corridor trains. Some of the *fourgons de marchandise* were replaced by 1st, 2nd and 3rd class corridor coaches with restaurant and *wagon lit* coaches, so that from the end of September onwards all the trains were gradually made up with through communication coaches, means of heating and Westinghouse brakes. Nursing sisters—at first two—were then added to the establishment.

These changes were very advantageous, especially for sitting-up cases. It was found impossible, however, to load serious

cases on stretchers into the 1st class compartment coaches without cutting away doors and removing windows and internal fittings. Major Myles notes, on the 3rd October, when twenty of his *fourgons* were taken off the train and eight passenger carriages and two brake vans put in their place, that he was not satisfied with the exchange and was adverse to lifting seriously wounded men off their stretchers on to seats of passenger coaches. He had great difficulty in loading the men on to the seats. The pain to the men in doing so was great and it took a long time and many men to load the train. In addition the patients on the seats were insecure in case of sudden stop or severe jerk in the train, until at any rate the Westinghouse brakes were provided. Major Myles in several notes in his diary and in a special report to the D.D.M.S., L. of C., referred to his desire to carry seriously wounded on the Brechôt apparatus in *fourgons* or other carriages with a long wheel base. The carrying capacity of a train with Brechôt apparatus was much greater than in a train made up of passenger coaches, and the interior of the wagons was easily cleaned and disinfected. He makes the following remarks regarding this method of transport :—

"I am greatly pleased with it as a means of carrying badly wounded men. At present all my serious lying down cases are carried on Brechôt frames, and any patient handed to me on a stretcher remains on it as long as he is in my charge. This apparatus is excellent when mounted in carriages of long wheel base with Westinghouse brake."

The defects, therefore, in railway transport during the Aisne battle were not due so much to the organization and composition of the ambulance trains, except in so far as the short wheel base and practically springless *fourgons* used at first were unsuitable, but rather to the number of them being too few and the time taken in the journeys to the base being too great to enable them to keep the clearing hospitals free from congestion. Consequently, as already noted, large numbers of sick and wounded had to be sent down in empty supply or ordinary passenger trains. The time taken varied, as the trains were much delayed from time to time by other traffic on the line. The longest journey in an ambulance train appears to have been that of No. 2 from Bazoches on the 17th September. It took 64 hours to reach St. Nazaire. Its next journey took 58 hours, but subsequently the journeys were of much shorter duration. During the retreat from Mons, however, No. 2 had experienced a journey of still longer duration, for it had taken 76 hours to reach St. Nazaire from Le Bourget, near Paris.

The journeys made by ambulance trains from the Aisne front were as follows :—

Table showing Ambulance Train Journeys from the Aisne Front.

Ambulance Train.	Date of Journey.	From.	To.
No. 1 ..	*17th–20th Sept.	Neuilly, Fère-en-Tardenois, Braisne, Oulchy.	Rouen–Havre.
	22nd–24th Sept.	Braisne	St. Nazaire.
	29th Sept.–1st Oct. ..	Braisne	Rouen.
	5th–7th Oct.	Braisne, Fère-en-Tardenois	Havre.
	14th Oct.	Braisne, Fère-en-Tardenois	Havre.
No. 2 ..	16th–19th Sept.	Oulchy, Bazoches ..	Le Mans, St. Nazaire.
	21st–24th Sept.	Braisne, Fère-en-Tardenois	Le Mans, St. Nazaire.
	28th–30th Sept.	Braisne	Le Mans, St. Nazaire.
	6th–8th Oct.	Braisne, Fère-en-Tardenois, Oulchy.	St. Nazaire.
No. 3 ..	14th–16th Sept.	Bazoches, Oulchy ..	Le Mans, St. Nazaire.
	19th–22nd Sept.	Braisne, Fère-en-Tardenois	St. Nazaire.
	25th–27th Sept.	Fère-en-Tardenois, Oulchy	Rouen.
	3rd–4th Oct.	Braisne, Fère-en-Tardenois, Oulchy.	Rouen.
	7th–9th Oct.	Braisne, Fère-en-Tardenois	Havre.
No. 4 ..	15th–17th Sept.	Braisne	Rouen.
	19th–21st Sept.	Fère-en-Tardenois, Oulchy	Le Mans, Nantes, St. Nazaire.
	24th–26th Sept.	Braisne, Fère-en-Tardenois, Oulchy.	Versailles, Le Mans, St. Nazaire.
	1st–3rd Oct.	Braisne	Havre.
No. 5 ..	16th–17th Sept.	Fère-en-Tardenois, Neuilly, Oulchy.	Versailles.
	18th–21st Sept.	Braisne, Fère-en-Tardenois	Le Mans, Nantes, St. Nazaire.
	23rd–26th Sept.	Braisne, Oulchy	Nantes, St. Nazaire.
	30th Sept.–2nd Oct. ..	Braisne, Neuilly, Oulchy	St. Nazaire.
	9th–11th Oct.	Braisne	Versailles, St. Nazaire.
	18th Oct.	Braisne	Rouen.
No. 6 ..	26th–28th Sept.	Braisne	Havre.
	3rd–6th Oct.	Neuilly, Braisne, Oulchy, Fère-en-Tardenois.	Versailles, St. Nazaire.
	12th–13th Oct.	Braisne	Villeneuve, Havre.
No. 7 ..	15th–17th Sept.	Braisne	Paris.
	20th–23rd Sept.	Braisne	Versailles, Nantes.
	3rd–5th Oct.	Braisne	Havre.

* The first date is the date of leaving the front area, the latter the day of finally unloading, and ready to start on the return journey. No. 8 Ambulance Train made no journeys to the Aisne area. Though ready at the end of September, its first journey was to Crépy-en-Valois, in the area to which the British troops were being withdrawn for entrainment to Flanders.

The British Red Cross Society's representative had been asked by Surg.-General Woodhouse on the 12th September to help him in adding to the number of ambulance trains. A number of *wagons lit* and restaurant cars were consequently collected and brought to Villeneuve Triage on the 23rd September, but without personnel. Unfortunately, after a trial trip to Braisne, it was found that a train made up mainly of *wagons lit* was unsuitable, and in any case had a comparatively small carrying capacity. It only took 80 patients. It was consequently decided to break up the train and distribute the coaches to existing ambulance trains and others in course of formation.

Medical Situation in Paris.

Several voluntary hospitals and French military hospitals in Paris and its vicinity were offering accommodation for the British sick and wounded, and No. 4 General Hospital was open at Versailles. The patients removed from trains at Villeneuve were transferred to it. The American Red Cross Society offered 200 beds in a hospital at Neuilly-sur-Seine for wounded only and had their own fleet of ten ambulance cars. No. 4 General Hospital at Versailles was some fourteen miles distant and was not well provided with ambulance transport at this time, so that most of the seriously wounded were taken to the American Red Cross Hospital, Major Cochrane, nursing sisters and a detachment of R.A.M.C. personnel being attached to it for duty. Accommodation was also provided in Paris for sick and wounded of the British Expeditionary Force in the Hertford British Hospital, in a British Red Cross Society hospital to the charge of which Lieut.-Colonel Stone, R.A.M.C., was appointed, in a French auxiliary hospital in the Hotel Majestic, a lady doctors' hospital in Claridge's Hotel, and in some of the French civil and military hospitals, all of which took sick and wounded from No. 3 Clearing Hospital at Villeneuve in times of pressure. On the 26th September No. 3 Clearing Hospital was instructed to transfer all serious cases in trains passing through the regulating station to No. 4 General Hospital.* Up to that time most of the railway aid post work at Villeneuve consisted in removing sick and wounded from supply and passenger trains coming down from the Aisne. These were never in great numbers, and were either sent to No. 4 General Hospital and the hospitals in Paris, or transferred to ambulance trains proceeding further down the line. The ambulance trains themselves were very seldom in need of assistance.

Medical and Surgical Supplies.

The field medical units experienced much difficulty at first in replenishing their medical and surgical supplies. In the earlier stages of the battle, stores which went up unaccompanied had failed to reach the units to which they were consigned. In fact many stores were found at the advanced bases in trucks which had returned with them from the front. They had

* Owing to the number of wounded and sick who had found their way to Paris in private cars or by voluntary efforts, and had thus been lost trace of, the Adjutant-General issued an order that no sick and wounded should be sent to voluntary hospitals, except through the regular channel.

gone up with supply trains which rarely got in touch with the field ambulances to which they were to be delivered. In these circumstances medical units appealed to the Red Cross Society in Paris for help and medical comforts, and stores were brought up in motor cars to Braisne and Rozières by Mr. Sharman, of the B.R.C.S., on the 15th, 21st and 24th September.

Nos. 1 and 2 Advanced Depôts of Medical Stores were sent up to Fère-en-Tardenois and opened at the railway station on the 18th and 21st September. Owing to the long railway journey fresh supplies were very slow in arriving, and on two occasions, on the 20th and 23rd September, these had to be supplemented by direct purchases from the Pharmacie Centrale of the French Army in Paris. The articles most urgently needed were field dressings, anti-tetanic serum, tincture of iodine, bandages, lint and cotton wool. The French military authorities helped in every way, and two light lorry loads of material were brought to Fère-en-Tardenois. The ambulance cars sent up from the L. of C. to G.H.Q. also carried with them medical and surgical stores, and, in order to ensure accuracy and rapidity in delivering material sent up in trucks attached to supply trains, R.A.M.C. orderlies accompanied them and handed them over personally to the receiving units. Subsequently a depôt was organized at Villeneuve on 20th September for supplying field medical units direct by motor transport, and on 22nd September the Adjutant-General gave instructions for a truck with stretchers, blankets, medical comforts and stores to be at railheads. Two railhead detachments of two officers and fifteen other ranks were sent with them to Oulchy and Braisne. These trucks were practically advanced depôts of medical stores. During this time No. 3 Advanced Depôt of Medical Stores remained at Le Mans.

No. 3 Base Depôt of Medical Stores was transferred to Rouen on the 17th September; No. 1 was at Nantes, and No. 2 at St. Nazaire.

The General and Stationary Hospitals.

The general and stationary hospitals on the L. of C. during the battle were again experiencing the disturbing effect of transfer to and from the Atlantic bases, but some of them had not yet been opened on the St. Nazaire line of communication, so that their return to Rouen and Havre did not create the same amount of disturbance as was caused by their hurried transfer to the

Atlantic bases at the beginning of September. At the end of September Nos. 3, 10 and 11 General Hospitals, and Nos. 6, 8, 9 and 12 Stationary Hospitals were open at St. Nazaire; No. 6 General Hospital was parked ready to move from St. Nazaire; No. 9 General and Nos. 2 and 3 Stationary Hospitals were at Nantes; No. 5 General and No. 4 Stationary at Angers; Nos. 1, 5 and 11 Stationary were at Le Mans, the last employed in railway aid post duties, and No. 4 General, assisted by No. 7 Stationary Hospital, was in the Trianon Palace Hotel at Versailles. No. 7 General Hospital, it will be remembered, had been broken up and its personnel used as reinforcements for other units.

No. 10 Stationary had been sent on the 27th September to Orleans. Its rest stations at Châteaudun and Bretigny were closed on the 20th September. At first only half the unit went to Orleans in order to take over a wing of the French hospital to which British sick and wounded had been admitted. Orleans was then being organized as the advanced base for the Indian Contingent arriving from Marseilles, and No. 10 Stationary Hospital consequently became a hospital for British sick from the contingent.* At the Channel ports Nos. 1 and 2 General Hospitals were open at Havre, and Nos. 8 and 12 General Hospitals at Rouen. No. 2 General Hospital returned to Havre by train on the 17th September to its old quarters. No. 1, which remained parked in camp at St. Nazaire since its arrival and just avoided being distributed for reinforcement purposes, went also by train to Havre, and arrived on the 28th September to open at San Vic Rest Camp. No. 8 General Hospital arrived at Rouen by train on the 13th September, and No. 12 on the 17th. The former proceeded to open at the Maison de Repos, Rue de Bois Guillaume, and the latter on the racecourse. The Australian voluntary hospital, remained at St. Nazaire, and the British Red Cross Society hospital, which had been removed from Paris on the 5th September under instructions from G.H.Q., was sent to Rouen on the 13th September.

Voluntary Hospitals.

At the end of September two voluntary hospitals, the Duchess of Westminster's and the Allied Forces Base Hospital, which had been organized in England and were waiting

* Captain Parkinson had been instructed on the 26th September to accompany the first party of troops from Marseilles to Orleans and act as a sanitary officer at Orleans.

authority to proceed to France, arrived in Paris under instructions from Lord Kitchener to open there for the reception of British sick and wounded who had found their way into French hospitals throughout the country. Major Douglas, R.A.M.C., was placed in charge of the arrangements for this, but neither of these two hospitals subsequently opened in Paris. They were transferred some time afterwards to the Channel bases, the former to Le Touquet, where it remained to the end of the war, and the latter to Boulogne.

On the 20th September the French military authorities of the 11th Region offered 3,000 hospital beds to the British, some 600 of these were at Nantes, but it is not clear where the remainder were or to what extent they were utilized.

Return to the Channel Bases.

The St. Nazaire L. of C. was finally abandoned on the 11th October and was then only to be used in case of necessity. The new bases were to be Havre, Rouen and Boulogne. It was intended at first to make Calais the principal medical base, but it was required for the Belgians. G.H.Q. moved from the Aisne front to St. Omer on the 13th October.

Administrative Changes.

When Colonel O'Keeffe left the L. of C. to take up the duties of D.D.M.S. IIIrd Corps, he was not replaced at first. Major Forrest, his D.A.D.M.S. remained in charge of the L. of C. medical administration until the 5th October, when Colonel Barefoot, who was the A.D.M.S., Advanced Base, was appointed A.D.M.S., L. of C., with Major Fell as his D.A.D.M.S. Major Birrell was then transferred from the 1st Cavalry Division headquarters as A.D.M.S. on Surg.-General Woodhouse's staff. He took up his duties on the 28th September. Various other changes took place in the administrative medical staff before the Expeditionary Force moved to Flanders. Colonel F. W. C. Jones was transferred to the Havre base from Marseilles on the 17th September, and was succeeded by Colonel S. Hickson as A.D.M.S. of the Southern L. of C. with Major H. R. Bateman as his D.A.D.M.S. on the 5th October. Lieut.-Colonel J. J. Russell succeeded Colonel Barefoot as A.D.M.S. of the Advanced Base on the same date, and Major Forrest was transferred to special duty in Paris as liaison medical officer with the French General Staff. Major Steele succeeded Colonel Hickson as A.D.M.S. of the 1st Cavalry Division, and

Major S. L. Cummins was appointed D.A.D.M.S. at G.H.Q., his place as medical officer in charge of the headquarters staff being taken by Captain Pascoe.

Medical Results of the Aisne Battle.

Gas gangrene, a septic complication of wounds, and tetanus were sources of anxiety from an early date. The impression got about that they were caused by contamination in the supply trains in which wounded were being sent to the base, but they occurred amongst the wounded before they left the field ambulances or clearing hospitals, and the original source of infection was the battle front. With regard to gas gangrene, Surg.-General Woodhouse obtained the services of Professor Weinberg, of the Pasteur Institute, and sent him to the front to see and advise on the early cases. Professor Weinberg was so much impressed by their gravity that he at once put all other work aside and devoted his whole time to the subject. As a result, an important contribution to the bacteriology of gas gangrene was published by him and his assistant, Dr. Séguin.

The demands for anti-tetanus serum became very great, but the amount available was limited not only in the medical stores in France but in all available sources of supply in England. The assistance of Professor Roux, of the Pasteur Institute in Paris, was, however, obtained during the Aisne fighting, and Captain Adrian Stokes was sent to G.H.Q. from St. Nazaire with large quantities of anti-tetanic serum on the 28th September in order to carry out anti-tetanic inoculations at the earliest possible moment. He arrived on his motor-cycle and sidecar, but, as enteric fever was then making its appearance and causing anxiety, he was authorised to purchase bacteriological material in Paris for early and accurate diagnosis. He returned with a well selected laboratory equipment and commenced work in No. 4 Clearing Hospital at Braisne on the 3rd October.

It is of interest in connexion with this to note that, before leaving England, Major S. L. Cummins, who was the Professor of Pathology at the Royal Army Medical College, had prepared a list of equipment for a mobile laboratory installed on a lorry and had left it with Sir William Leishman when he went to France with G.H.Q. On the 3rd October 1914 Sir William Leishman was sent to France to join the D.M.S. staff as adviser in pathology. He was asked before leaving England to organize and send to France a mobile bacteriological laboratory in accordance with this scheme. He found that a somewhat

similar, but more elaborate laboratory, was being prepared under the supervision of Dr. C. J. Martin, the Director of the Lister Institute, and Dr. Rowland, for use in plague work. This laboratory was rapidly completed and sent to France in charge of Lieutenant Rowland as No. 1 Mobile Laboratory. It arrived on the 12th October, and went to St. Omer. This was the origin of the mobile laboratories, which subsequently became recognised field medical units.

Another innovation that resulted from the experiences of the Battle of the Aisne was the employment of dentists with the field army. It so happened that Sir Douglas Haig, in command of the First Army, suffered severely from toothache at a time when all his energies were required for the battle. The immediate needs were met by bringing a civilian dentist from Paris to Fère-en-Tardenois. He remained there for three days and treated several cases. In consequence of this incident a telegram was sent to the War Office asking for the provision of dental officers, and dentists began to arrive and were attached to casualty clearing stations before the British troops had left the Aisne.

The first of the consulting surgeons, Colonels G. Makins and Sir Anthony Bowlby, of the R.A.M.C.(T.F.), were also sent to France during this period. Colonel Makins left England on the "Carisbrook Castle" on 12th September, arrived at St. Nazaire on the 17th September, and at G.H.Q. on the 28th September after visiting hospitals on the L. of C. Sir Anthony Bowlby arrived on the 24th September at Villeneuve, to which the D.M.S. office had moved from Le Mans on the 18th September.

CHAPTER XV.

THE FLANDERS FRONT IN 1914.

AS soon as General Joffre found that the Germans were no longer in retreat and firmly established on the Aisne, he resumed the operation for enveloping the right flank of the enemy, which had been the keynote of his strategy both at the Marne and in the pursuit after the battle. The Germans, however, were equally intent on threatening the left flank of the Allies. Thus, both belligerents extended their western flanks northwards towards the sea, but neither was able to achieve his purpose.

Outline of the Operations.

Between the 15th September and 8th October the French extended their line from the left of their 6th Division at Ribecourt to a point between Bethune and La Bassée, with cavalry operating in the neighbourhood of Bethune, Aire and Hazebrouck, and territorial divisions around Aire and St. Omer. German cavalry from the direction of Lille and Ypres were endeavouring to outflank this movement. The British Expeditionary Force was withdrawn from the Aisne in order to be nearer the sea and its home resources and to extend the line northwards still farther from in front of La Bassée to join up with a 3rd Cavalry Division, consisting of the 6th and 7th Cavalry Brigades, and the 7th Division, composed of units from overseas garrisons, which were being landed on the Belgian coast to assist the Belgian army in its effort to prevent the capture of Antwerp.

A brigade of Royal Marines, some 2,200 strong, had arrived at Antwerp on the 3rd October from Dunkirk, Cassel and Lille, and was joined on the 5th October by two naval brigades of naval reserves and volunteers, but when Antwerp capitulated on the 10th October, this naval contingent, which subsequently formed the Royal Naval Division in Gallipoli, and the 63rd Division in France, retired to Ostend and returned to England, some of its elements having crossed during the retreat into Dutch territory where they were interned.

The 7th Division had disembarked at Zeebrugge on the 2nd October and the 3rd Cavalry Division at Ostend on the 8th October. They formed the *IVth Corps* under General Rawlinson

and were employed in the neighbourhood of Bruges and Ghent in covering the retreat of the Belgian Army, enabling the latter to withdraw from Antwerp to the line of the Yser, where it held a front from Boesinghe through Dixmude to the sea at Nieuport. The IVth Corps retired with it to positions in front of Ypres which was reached on the 14th October.

Between the 11th and 19th October the Expeditionary Force from the Aisne arrived on the Flanders front and extended the line from the French left, in front of La Bassée, to the north-east of Ypres, with French cavalry filling the gap between the British IInd and IIIrd Corps. The *IInd Corps* after detraining at Abbeville and its vicinity on the 7th and 8th October had reached the line of the canal between Aire and Bethune on the 11th October and pivoting on its right fought its way eastwards until it occupied a line from Givenchy to Aubers, with its 5th Division on its right connecting with the French, north of Annequin on the Bethune–La Bassée road, and with its 3rd Division on its left.

The *IIIrd Corps* detrained at St. Omer on the 11th October and advanced through Hazebrouck and Bailleul to a line eastwards and north and south of the Armentières–Lille railway, with its 6th Division on the right south of the line as far as Radinghem and the 4th Division north of the line to the Armentières–Messines road, eastwards of Ploegsteert through Le Gheer and St. Yves. The gap between the IInd and IIIrd Corps, which was held at this time by French cavalry, was filled by the 19th Brigade by the 21st October. This brigade had been with the 6th Division until the 16th Brigade rejoined it from the Aisne. It was then withdrawn to G.H.Q. reserve and went to Ypres on the 17th October, but was moved to the right of the 6th Division almost immediately afterwards and held a line through the village of Le Maisnil.

The 1st and 2nd Cavalry Divisions had marched from the Aisne, the former reaching the vicinity of St. Venant on the 10th and the latter the vicinity of Hazebrouck on the 12th October. They were then formed into a *Cavalry Corps* under General Allenby, and the 4th Cavalry Brigade with the 4th Cavalry Field Ambulance was transferred to the 2nd Cavalry Division. The cavalry divisions moved in advance and on the left of the IIIrd Corps reconnoitring the passages of the Lys and eventually took up a line on the left of the latter, west of the Lys–Yser canal, and linked up with the 3rd Cavalry Division, which was filling a gap between the east of the canal and Zandvoorde, and connecting the line with the 7th Division.

The 7th Division continued the line from Zandvoorde through Gheluvelt to Zonnebeke ; and when the *Ist Corps*, which was the last to arrive from the Aisne, had completed its detrainment at St. Omer and neighbourhood on the 19th October, the British line was still further extended from Zonnebeke through St. Julien and Langemarck to Lizerne on the Yser Canal north of Ypres, with the 2nd Division on the right and the 1st on the left.

This was approximately the line occupied by the British on the 21st October 1914. During the advance of the several divisions and cavalry divisions to it desultory fighting, occasionally of a severe character, took place at several points. But from the 21st October onwards until the 19th November the British were attacked and counter-attacked continuously, and the historic battles described in the official nomenclature as the battles of Messines, Armentières and Ypres 1914 took place. Kaleidoscopic changes were made in the line and in the disposition of the divisions holding it. Ground was lost, regained and lost again many times, and the casualties exceeded those of any of the previous encounters with the enemy.

Owing to the severity of the German attack and the losses involved, the line held by the British was considerably contracted during the battle. On the 24th and 25th October French divisions took over the greater part of the sector held by the Ist Corps from Zonnebeke to Lizerne. The IVth Corps ceased to exist for the time being as a separate formation and the 7th Division and 3rd Cavalry Division were placed under the Ist Corps command. The line then held by the Ist Corps was from the château west of Zandvoorde to the Moorslede–Zonnebeke Road, with the 7th Division on the right as far as the Menin Road, the 1st Division in the centre to the village of Reutel, west of Becelaere, and the 2nd Division on the left to the Zonnebeke–Moorslede Road. The 3rd Cavalry Division was in support near Hooge.

On the 30th October the French IXth Corps came up on the left of the Ist Corps and the French XVIth Corps and a cavalry corps took over part of the line occupied by the British Cavalry Corps. The 2nd Cavalry Division was then withdrawn to the neighbourhood of Bailleul, while the 1st Cavalry Division held the position east of Wulverghem, being relieved there from time to time by the 2nd Cavalry Division.

The *Indian Corps*, consisting of the Lahore and Meerut Divisions, had by this time arrived in the neighbourhood of Hazebrouck and St. Omer, and was thrown into the line, three

battalions of the former division having already been sent to support the cavalry at Wulverghem on the 22nd October. The remainder of the division took over trenches in the Neuve Chapelle sector of the line on the 28th October. By the 8th November both of the Indian divisions were put into the line occupied by the IInd Corps, enabling the latter to be withdrawn into reserve and come up eventually to the Ypres sector and relieve the Ist Corps, which had borne the brunt of the battle.

The 7th Division was withdrawn into reserve on the 7th November and replaced by battalions of the IInd Corps. Battalions of the territorial force were also arriving on the Flanders front and were distributed to divisions in the line after passing through a camp of instruction at Blendecques near G.H.Q. which had been established at St. Omer.

The battle died down on the 19th November and the opposing forces then settled down to the occupation of a line of trenches and such fighting as took place to the end of the year was local and led to little or no change in their relative positions. French and British troops had been intermingled during the battle but at the end of November they were sorted out and the British were concentrated on a line which extended from Festubert, north of the Bethune–La Bassée Canal, to the vicinity of Hollebeke, through Richebourg l'Avoué, Rue du Bois, the east of Armentières and Ploegsteert Forest, and the western slope of the Messines–Wytschaete ridge. The Indian Corps occupied the right of the line as far as a point on the La Bassée–Estaires road opposite Neuve Chapelle, until relieved by the Ist Corps between the 23rd and 25th December ; the IVth Corps, which was re-constituted with the 7th and 8th Divisions, was in the right centre as far as La Boutillerie ; the IIIrd Corps in the left centre to the north of Ploegsteert Wood ; and the IInd Corps on the left. The cavalry divisions were withdrawn to the area north and south of the line Hazebrouck–Bailleul ; and the *Indian Cavalry Corps* consisting of two cavalry divisions were arriving and taking up billets in the area south of Aire.

Physical Characters of the Flanders Front.

The country over which the British fought was, as a rule, flat and low lying, with numerous villages and roads, the latter generally paved in the centre but unmetalled on the sides. It was intersected by the Aire–La Bassée Canal in the southern sector and by the Aire–Lys Canal in the centre, the latter passing through Merville, Estaires and Armentières, beyond which

it turned northwards and joined the Yser Canal that ran by Ypres to the sea at Nieuport. There were several minor canals and watercourses and the ground in many places was apt to become waterlogged in wet weather. The country has a gradual slope upwards east of Ypres to the road running north and south from Gheluvelt to Passchendaele and onwards. East of this road it descends to flat country. It also slopes upwards east of the Neuve Eglise–Ypres road to the Messines–Wytschaete ridge, and there is a minor elevation farther south from La Bassée to Aubers to which the ground rises from Neuve Chapelle and south of it from the La Bassée–Estaires road. The flat country between Hazebrouck and the Messines-Wytschaete ridge is broken by a chain of isolated and prominent hills; from the Cassel hill north of Hazebrouck to the Kemmel hill facing Messines; the intermediate hills from west to east being the Monts des Cats, Mont Kokereele, Mont Noir, Mont Vidaigne, Mont Rouge and Scherpenberg. With the exception of a slight rise at Hinges, north-west of Bethune, the whole of the country is elsewhere flat. At the close of the battle the enemy had possession of practically the whole of the higher ground of the Passchendaele-Gheluvelt, the Messines–Wytschaete and Aubers–La Bassée slopes.

Weather.

The weather during the greater part of October and the earlier days of November was fine, but from the 10th November onwards it became unsettled and there were many wet and stormy days, with snow and severe frost from the 18th to 24th November, when there was a thaw. December was cold and misty with many wet days, and trench foot, rheumatism and myalgia were common complaints.

The Medical Situation.

The situation as regards the medical services depended upon four somewhat distinct phases, namely: the operations of the IVth Corps from the time it landed at Ostend until it joined up with the Expeditionary Force on the Ypres front; the phase of encounter fighting during the advance of the Expeditionary Force from the Aisne to the line occupied on the 21st October; the phase of critical battles from the 21st October until the 19th November; and finally, the period following the battles to the end of the year when the British had settled down into definite trench warfare on a more or less fixed line of trenches.

The Medical Services with the IVth Corps.

In the first of these phases the medical arrangements were incomplete and appear to have been hurriedly improvized. The arrangements for the Royal Marine and Royal Naval Brigades were made by the Admiralty, and had scarcely time so far as they went, to come into definite work, as the Naval Division formed of these brigades was only one week in Belgium.

Colonel R. J. Geddes had been appointed D.D.M.S. of the IVth Corps and arrived at Ostend on the 11th October only to find that it was being abandoned. He went to Dunkirk the next day and satisfied himself that there was hospital accommodation for about 800, in a new civil hospital of the French, which might act as a base hospital for the Corps during its retreat to the Ypres front. He remained there until the 16th October and then proceeded to Boulogne to establish a base there, but by this time Colonel B. Skinner had been sent from England for the purpose. Colonel Geddes consequently rejoined IVth Corps headquarters at Poperinghe on the 17th October and remained with the Corps until the staff returned to England. He went to England on the 31st October and returned with the IVth Corps headquarters to Merville on the 6th November.

Major C. K. Morgan, then in England, was in the meantime ordered on the 5th October to establish a base at Ostend. He was informed, however, that no L. of C. medical units would be sent at that time to Ostend, and he arrived there with an establishment of two men only of the R.A.M.C., a medical companion, a surgical haversack and two water bottles. There was no administrative medical officer to whom he could refer for instructions, and his prospects, therefore, were not bright. He was left to do the best he could in the circumstances, and set to work to organize a civil sanitary squad, for duty at the docks, and a hospital at the Kursaal. He was able to arrange for the admission of sick into the French civil hospital at Ostend, and found at the Kursaal a party of English and American ladies, amongst whom was a lady doctor, who helped him in getting ready a temporary hospital there. By the night of the 7th October, chiefly through the generosity of local tradesmen and private individuals he had 100 beds ready, obtaining medicines and dressings from local chemists. Fifty-six sick and wounded were admitted the following day, and Major Morgan then asked for personnel of a clearing or stationary hospital to come up and look after them. The 7th Division field ambulances, Nos. 21, 22 and 23,

had arrived, and he also applied to the A.D.M.S. of the Division, Colonel W. T. Swan, then at Bruges, for assistance. Two tent sub-divisions and a bearer sub-division of No. 22 Field Ambulance were consequently sent to Ostend and arrived on the 9th October for duty at the Kursaal.

On the 10th October the hospital ship "St. David" came to Ostend and cleared the hospital. It sailed from Ostend on the 12th October with two officers and 136 other ranks sick and wounded. Two new hospitals, No. 14 General and No. 14 Stationary,* also arrived at Ostend on the 11th October but were redirected to Boulogne without disembarking. A ship, the "Copenhagen," also arrived on the same day and took off Belgian refugees and all the remaining sick and wounded, together with the party of ladies who were working at the Kursaal. Ostend was then clear of shipping on the 13th October and the base closed. Major Morgan went on to Dunkirk. Getting no orders there he continued his voyage to Boulogne, where, being still without orders, he reported himself to G.H.Q. at St. Omer, and took over the command of No. 20 Field Ambulance five days later. On the 6th November he was appointed D.A.D.M.S. of the 7th Division.

3rd Cavalry Division.—The field ambulances of the 3rd Cavalry Division, to which Colonel R. E. R. Macleod had been appointed A.D.M.S. were Nos. 6 and 7 Cavalry Field Ambulances. They accompanied the division to Belgium and retired with the division to the neighbourhood of Wytschaete, evacuating the sick and wounded by mechanical transport to Ostend during the retreat. They reached Wytschaete by way of Ypres. During the march No. 6 Cavalry Field Ambulance had been directed in error to Dadizeele on the 14th October and was very nearly captured by the enemy. It was reported to be missing, but arrived at divisional headquarters at Wytschaete the following day. No. 7 Cavalry Field Ambulance had also a somewhat adventurous march, as after reaching Ypres on the 14th October it was ordered back to Iseghem by way of Moorslede. It retired, however, to Ypres through Zonnebeke the next day and reached Wytschaete in the evening. Both ambulances were moved to Passchendaele on the 18th October.

7th Division.—The 7th Division withdrew through Bruges and Ghent to Ypres between the 10th and 14th October without

* According to War Establishments, two General and two Stationary Hospitals mobilized with each division so that when the 7th Division mobilized Nos. 13 and 14 General and Nos. 13 and 14 Stationary Hospitals were also mobilized. No. 13 General and No. 13 Stationary had gone to Boulogne.

casualties, and all three field ambulances arrived in Ypres on the 14th October, the sub-divisions of No. 22 Field Ambulance being withdrawn from Ostend on the 11th October. The sick during the march to Ypres were brought along with the field ambulances and evacuated from Ypres to Dunkirk by train. On arrival at Ypres, No. 22 Field Ambulance opened a reception hospital in the Ecole des Dames, near the railway station, and acted as a clearing hospital for the whole of the 7th Division. No. 23 Field Ambulance also opened in the town, while No. 21 sent a sub-division to open in one of the Convents

The Medical Services during the Advance to the Flanders Front.

IInd Corps Field Ambulances.—In the second phase of the operations the field ambulances of both the 3rd and 5th Divisions of the IInd Corps had detrained at Abbeville or its vicinity on the 7th and 8th October marching to Bethune and to the villages north and south of that town. The field ambulances of the *5th Division* on the right of the line opened main dressing stations at Beuvry, Bethune, and Richebourg-l'Avoué, and advanced dressing stations at Annequin and Château de Gorre. These dressing stations were opened on the 12th and 13th October, with the exception of the one at Richebourg-l'Avoué which did not open until the 17th. There was at Bethune a well-equipped French military and civil hospital; No. 15 Field Ambulance opened in it on the 12th October, and became the main dressing or collecting station for the division.

The field ambulances of the *3rd Division* went to Locon, Les Lobes and Zelobes on the Bethune–Estaires Road on the 12th and 13th October, and opened dressing stations at each of these places with advanced dressing stations at Neuve Chapelle, Croix Barbée and Rouge Croix. On the 19th October one of its field ambulances, No. 8, went as far forward as Aubers and opened an advanced dressing station at Le Plouich. It had, however, to be withdrawn to Croix Barbée on the 22nd October. No. 9 Field Ambulance also was well forward at that time, and had a main dressing station at Rouge Croix, with an advanced dressing station in a farm near Aubers.

The IIIrd Corps Field Ambulances.—The field ambulances of the IIIrd Corps detrained at St. Omer and its vicinity, or at Cassel, between the 11th and 13th October. The field ambulances of the *4th Division*, after detraining, marched to

Bailleul, opening dressing stations at various places on the line of march. They went on to Armentières, Nieppe and Ploegsteert, and formed main dressing stations in the civil hospital at Armentières and in a farm about half a mile south of Ploegsteert, with advanced dressing stations at Houplines and on the Ploegsteert–Le Gheer Road. One of the field ambulances, however, No. 12, opened in a school at Bailleul as a divisional main dressing and collecting station until the 21st October, when it also went forward to Armentières, sending its bearer division to Nieppe. The field ambulances of the *6th Division* marched on the 12th and 13th October to the area south-west of Bailleul. In advancing from Bailleul to the line south-east of Armentières, dressing stations were opened at Strazeele and Petit Sec Bois, south of Strazeele, on the 13th October, at Haute Maison on the 14th October, and at a farm three miles south-east of Steenwerck on the 15th October. On the 16th October all three field ambulances were at Sailly-sur-la-Lys and Fleurbaix, and pushed forward to Bois Grenier, Rue des Bois and La Chapelle d'Armentières.

No. 19 *Field Ambulance* detrained at Arques on the 11th October, reached Bailleul on the 14th October, and opened an advanced dressing station at Steenwerck on the 15th October, when it went to Neuve Eglise. The 19th Brigade to which it was attached had then come into G.H.Q. reserve, and had been moved to Vlamertinghe, but on the 20th October the brigade was put into the line in the neighbourhood of Laventie, as noted above, and No. 19 Field Ambulance, after a long and trying march of twenty-three miles in rain on the 20th October, moved from Vlamertinghe to Laventie, and sent out an advanced party to Fromelles. There was much fighting at the time in the vicinity of Bas Mesnil village on the 21st October, and No. 19 Field Ambulance moved to Croix Blanche, clearing as many wounded as possible from the fighting on that day.

The Cavalry Corps Field Ambulances.—The *1st Cavalry Division* arrived at St. Venant on the 10th October. In the march from the Aisne front the light echelons of the cavalry field ambulances, as organized before leaving the Aisne, marched with the brigades, and the heavy echelons with the divisional train. Those of the 1st Cavalry Division had marched from the Aisne to St. Venant, an average of over twenty-three miles daily, between the 4th and 11th October. The marches were consequently very trying both to men and to horses. There was desultory fighting in the advance to the line taken

up between Ploegsteert Wood and Hollebeke, and the wounded during that period were sent back to Hazebrouck by motor ambulance cars which had been allotted to the division from No. 1 Motor Ambulance Convoy in the proportion of two to each cavalry field ambulance. During skirmishes in the forest of Nieppe on the 12th October wounded were collected to the château at La Motte. Desultory fighting continued on the 14th, 15th and 16th October, the wounded being brought to Dranoutre, and, as the advance progressed, to Neuve Eglise. Between the 17th and 21st October advanced dressing stations were formed at Ploegsteert, La Hutte and Wulverghem,

Ploegsteert Advanced Dressing Station.

with main dressing stations at Neuve Eglise. The sick and wounded were during that time evacuated to Bailleul.

During its march from the Aisne to the Flanders front, the *2nd Cavalry Division* had with it the 2nd and 5th Cavalry Field Ambulances. The 4th Cavalry Brigade had been transferred to the division, as already noted, on the 17th October and took with it the 4th Cavalry Field Ambulance.

The 2nd Cavalry Division advanced through Caestre and Godewaersvelde to the east of Wytschaete. Only a few men were wounded during the advance ; they were cleared by motor ambulance cars to Hazebrouck from dressing stations at Boeschepe on the 15th October, Westoutre and Messines on the 16th, and Wytschaete on the 17th October. On the 16th October the light echelon of No. 2 Cavalry Field Ambulance had advanced as far as Warneton, but this place

came into possession of the enemy on the 17th October, and the medical officer of the 16th Lancers, who had remained behind with three wounded men unfit to be moved, was captured. No. 4 Cavalry Field Ambulance, when it joined the 2nd Cavalry Division on the 17th October, opened a main dressing station for the division at Messines. These positions, however, proved to be too far advanced and the 2nd Cavalry Division ambulances were subsequently withdrawn to Kemmel, Groote Vierstraat and Voormezeele, with the heavy echelons at La Clytte.

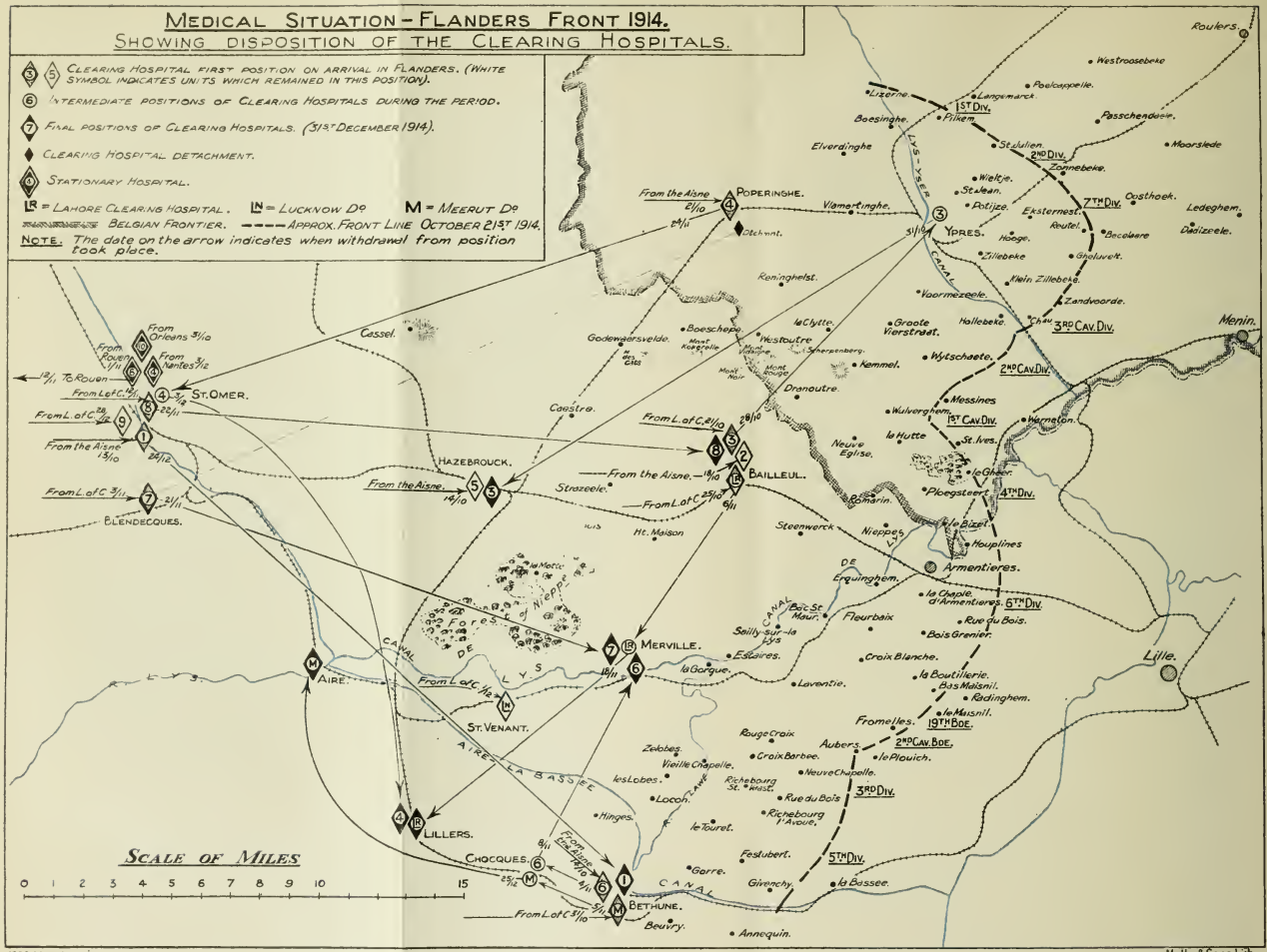
The *3rd Cavalry Division*, when it reached the Ypres front was moved at first to the Passchendaele area until the Ist Corps arrived, and afterwards took up a line on the left of the Cavalry Corps. During the operations of the division in the Passchendaele area both No. 6 and No. 7 Cavalry Field Ambulances were actively engaged. The former opened a dressing station at Moorslede on the 19th October, evacuating wounded by motor ambulance cars to Ypres, where they were taken over by field ambulances of the 7th Division. The wounded had been collected by its ambulance wagons from various positions along the ridge as far as the Ypres–Menin road, and as far forward as Ledeghem. It withdrew in the afternoon to Passchendaele and on the following day moved northwards to Westroosebecke and opened there, withdrawing eventually to Poelcappelle and Langemarck, and on the 21st October, when the area north-east of Ypres was taken over by the Ist Corps, to the Zandvoorde–Zillebeke area, south-east of Ypres. No. 7 Cavalry Field Ambulance opened a dressing station in a convent in advance of Passchendaele on the 19th October and in the evening at Zonnebeke. On the 20th it was to retire to St. Julien, but owing to contradictory orders moved to Zonnebeke, where it found itself out of touch with the troops, was severely shelled and retired in the evening to St. Jean. It then moved to the area south-east of Ypres.

No D.D.M.S. had at this time been appointed to the staff of the Cavalry Corps. Colonel Hickson had left the 1st Cavalry Division on the 4th October, as already noted, when divisional headquarters moved back to Braisne, but he was not replaced until the 17th October, when Major Steele arrived to take up the appointment. The sick and wounded of the Corps were at first evacuated to Hazebrouck, but afterwards to Ypres and Bailleul.

The IVth Corps Field Ambulances.—The *7th Division* field ambulances reached Ypres on the 14th October, when the three

field ambulances were billeted in the town, and, as already stated, were evacuating their sick and wounded to Dunkirk. On the 16th October the brigades of the division advanced along the Menin road, and the bearer divisions of the field ambulances, each with three ambulance wagons, marched with the brigades, those of No. 22 advancing to Zonnebeke, of No. 21 to Gheluvelt and of No. 20 to Zandvoorde. The tent divisions remained in Ypres. Dunkirk was now no longer available for evacuation and the sick and wounded were cleared from Ypres by motor ambulance convoy to Hazebrouck. On the 17th October the tent divisions of the field ambulances were ordered to join their bearer divisions in the brigade areas, with the exception of a tent sub-division of No. 21 Field Ambulance, which remained as the reception hospital near the railway station in Ypres. The division was to attack Menin on the 19th October, and a divisional collecting station was formed at Oosthoek by No. 22 Field Ambulance. Eighty-six wounded were brought back from Dadizeele, but seven of the men of the field ambulance were missing. The brigade with which No. 22 Field Ambulance was associated was obliged to fall back to Zonnebeke, and the ambulance withdrew to Potijze, leaving an advanced dressing station in the convent at Zonnebeke. At the same time No. 21 and No. 23 Field Ambulances had opened advanced dressing stations in the woods behind Gheluvelt. They were severely shelled on the 21st October and were obliged to withdraw—one of its medical officers and twenty men of its bearer division being taken prisoners while collecting wounded.

The Ist Corps Field Ambulances.—The headquarters of the Ist Corps, which left Braisne on the 18th October, arrived at Cassel on the 19th October and proceeded to Poperinghe on the following day, its report centre being at Ypres. The 1st Division had also left the Aisne front on the 18th October, arrived at Cassel on the 19th and proceeded to Poperinghe on the 20th October. The 2nd Division had already reached the Flanders front having left Bourg on the 14th October and entrained at Fère-en-Tardenois the same day. Its headquarters detrained at St. Omer on the night of the 15th/16th October and marched to Hazebrouck, moving to Ypres on the 20th October. Consequently the field ambulances of both the 1st and 2nd Divisions did not come into position on the Flanders front until the commencement of the third phase of the operations. The 1st Division field ambulances were then moving into the area Elverdinghe – Pilkem – Langemarck,



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NOTE. The positions of field ambulances with advanced and main dressing stations were constantly changing and not yet stabilized as in the subsequent trench warfare. They were generally in the area east of a line from Ypres to Bethune.

and the 2nd Division field ambulances, starting from Vlamertinghe and its vicinity, were moving into Ypres and to the area north-east of it in the neighbourhood of St. Julien and Wieltje.

The Clearing Hospitals—While the British Expeditionary Force was thus coming into line on the Flanders front up to the 21st October, clearing hospitals were also being brought there. No. 1 Clearing Hospital, which had left Fère-en-Tardenois on the 6th October, arrived at Abbeville on the 9th. It left a detachment of one officer and seven other ranks to take over 100 beds, under the French, in the civil hospital there, and had sent another detachment of one medical officer and twelve men to Boulogne. It went on to St. Omer on the 12th October and opened in a large jute factory near the railway station. The Boulogne party was recalled and 200 beds were added to the unit by taking over St. Joseph's College at St. Omer. It sent a railhead party to Hazebrouck on the 13th October. They returned, however, to St. Omer two days later.

No. 2 Clearing Hospital after leaving Neuilly St. Front formed a temporary railway rest station and clearing hospital at Crepy-en-Valois, to which sick from the Expeditionary Force during their withdrawal from the Aisne and entrainment for the Flanders front were sent for evacuation. It left Crepy-en-Valois on the 12th October, detaching one officer and ten other ranks to remain as a railway rest station, until the whole of the Expeditionary Force had been withdrawn from the Aisne. It arrived at Bailleul on the 18th October and opened in a seminary about one mile from the railway station.

No. 3 Clearing Hospital handed over the railway rest station at Villeneuve to personnel of the B.R.C.S. on the 14th October and was sent to Armentières, where it arrived on the 20th October. In passing through St. Omer on the previous day a detachment of two medical officers and twelve other ranks, with equipment, were sent by motor transport to Ypres. Armentières was being shelled and the clearing hospital on arrival there was immediately withdrawn to Bailleul.

No. 4 Clearing Hospital remained at Braisne until the whole of the Expeditionary Force had been withdrawn. The town, as already noted, was shelled on the 15th October, and the nursing sisters who came to work there under the B.R.C.S. from Paris were at once sent away. The unit left Braisne on the 19th October and arrived at Poperinghe on the 21st October, where it opened in a château, hospice and school.

No. 5 Clearing Hospital left Braisne on the 7th October and opened in Hazebrouck on the 14th October in the seminary of St. François d'Assisi after detaching two medical officers and seventeen other ranks for duty in the French hospital at St. Omer.

No. 6 Clearing Hospital left Rozières by light railway on the 6th October and entrained at Oulchy for Bethune, where it arrived on the 14th October and opened in the Ecole des Jeunes Filles.

Clearing hospitals were thus established as follows during the advance to the Flanders front :—

On Oct. 12th ..	No. 1 Clearing Hospital ..	St. Omer.
,, ,, 14th ..	No. 5 Clearing Hospital ..	Hazebrouck with a detachment at St. Omer.
,, ,, ,, ..	No. 6 Clearing Hospital ..	Bethune.
,, ,, 18th ..	No. 2 Clearing Hospital ..	Bailleul.
,, ,, 21st ..	No. 3 Clearing Hospital ..	Bailleul with a detachment at Ypres.
,, ,, ,, ..	No. 4 Clearing Hospital ..	Poperinghe.

Motor Ambulance Convoys.—All the divisions had two or more motor ambulance cars attached to them during this period, chiefly from No. 1 Motor Ambulance Convoy, and were clearing sick and wounded direct from their field ambulances to the clearing hospitals as soon as the latter were established, and to ambulance trains. No. 1 Motor Ambulance Convoy was employed in evacuating from the more advanced clearing hospitals to St. Omer, where the headquarters of the convoy remained. No. 2 Motor Ambulance Convoy, the cars and personnel of which had been collected by Major Evans in Paris from voluntary sources, left Paris on the 8th October and went to Abbeville, where the convoy was organized into sections. It then proceeded to Bethune, where it arrived on the 14th October and was actively employed in clearing the field ambulances of the IInd Corps to Bethune, and from Bethune to St. Omer, or to the ambulance trains that came up to the railway station at Bethune. No. 3 Motor Ambulance Convoy was formed at Abbeville under the command of Major Poe on the 12th October. At that time it consisted of twenty-eight motor ambulance cars only. Its headquarters were at Hazebrouck on the 15th October, and it was employed in evacuating the field ambulances of the IIIrd Corps and Cavalry Corps to Hazebrouck, and to ambulance trains that arrived there. On the 16th October the headquarters of the unit were moved to Bailleul, leaving three cars at Hazebrouck for entraining purposes. It was employed then in clearing from the Armentières front to Hazebrouck and to Bailleul,

and to ambulance trains which were being sent to Steenwerck. Motor ambulance cars were gradually added to complete the convoy, and on the 17th October the number of cars with it was thirty-two, and by the 21st October forty-four.

Ambulance Trains.—Ambulance trains during the period 13th to 21st October were running daily to the Flanders front. Eight had been completed by the 11th October, all ot them organized with inter-communication. Sick and wounded were cleared by them from Bethune on the 13th October and daily from the 16th to the 21st ; from St. Omer on the 15th ; from Hazebrouck on the 14th, 15th, 17th and 19th ; from Bailleul on the 16th, 18th and 20th ; from Steenwerck on the 18th, 20th and 21st ; from Ypres on the 19th ; and from Armentières on the 20th. The numbers evacuated during these days were as follows :—

From	Bethune	2,717
,,	St. Omer	375
,,	Hazebrouck	904
,,	Bailleul	591
,,	Steenwerck	523
,,	Ypres	231
,,	Armentières	326
	TOTAL ..	5,667

The majority of the sick and wounded were brought to the trains direct from the field ambulance dressing stations and divisional collecting stations without passing through clearing hospitals. In fact the clearing hospital admissions during the period were comparatively few. Thus for the week ending 19th October No. 1 Clearing Hospital admitted 655 and evacuated 581 ; No. 2, 322 and evacuated 30 ; No. 5, 307 and evacuated 318. Although No. 6 was also open during the week, there is no record of the admissions to it, but in any case they are not likely to have been so numerous as the numbers placed on the ambulance trains at Bethune.

The ambulance trains were running to Boulogne, which was now being organized as an important medical base. The fact that the base was thus comparatively near the area of fighting was of immense advantage, as it enabled the ambulance trains to shorten the time of the return journey from front to base and base to front.

The Medical Services during the Period of the Battles of Ypres.

During the period of continuous battles between the 21st October and 19th November 1914 divisional main dressing stations were formed by field ambulances at one time or another

at Bethune, Locon, Vieille Chapelle, Les Lobes, Zelobes Estaires, Sailly-sur-la-Lys, Bac St. Maur (about one and a half mile from Armentières), Erquinghem (on the Estaires-Armentières road), Amentières, Romarin, (about a mile east of the Bailleul-Armentières road on the road from it to Ploegsteert), Nieppe, Neuve Eglise, Dranoutre, Kemmel, La Clytte, and Ypres and its vicinity. The wounded were collected to them from advanced dressing stations at Annequin, Beuvry, Château de Gorre, Le Touret and Richebourg l'Avoué, on the La Bassée front ; from Richebourg St. Vaast, Croix Barbée, and the neighbourhood of Rouge Croix on the Neuve Chapelle front ; from points on the Neuve Chapelle-Fleurbaix road, on the Estaires front ; and from Bois Grenier, La Chapelle d'Armentières and Houplines on the Armentières front. Further north on the Ploegsteert front the advanced dressing stations were at Le Bizet, Ploegsteert and La Hutte, and were cleared to Romarin and Neuve Eglise or Nieppe.

On the Messines and Ypres fronts the positions of the advanced dressing stations were less permanent and were moved about in conformity with the operations and with the constant changes in the position of troops. The main work, however, of the medical services was concentrated around Ypres.

The 7th Division.—The three field ambulances of the 7th Division were in Ypres during the earlier stages of the battle and had to carry on the bulk of the work of receiving and evacuating wounded from the town until the division was withdrawn from the Ypres salient on the 7th November. Their bearer divisions were working in the neighbourhood of Ypres both north and south of the Ypres-Menin Road from Klein Zillebeke to Eksternest, and suffered many casualties.

The 1st Division.—While the 7th Division field ambulances were thus opened as dressing stations in the town of Ypres, the field ambulances of the 1st Division took over a large institution, the Ecole de Bienfaisance, just outside Ypres on the Menin road. To it and to the reception hospital near the railway station at Ypres most of the wounded in the fighting north and south of the Menin road were brought. It was provided with accommodation and fittings in every way suitable for the treatment and comfort of the wounded, the directors of the institution handing over numbers of mattresses and blankets. No. 3 Field Ambulance was established there until the 6th November. The tent divisions of Nos. 1 and 2 Field Ambulances were in reserve on the Vlamertinghe-Reninghelst road about one mile south of Vlamertinghe, but

their bearer divisions were working at various points along the Ypres-Zonnebeke road and in the neighbourhood of Hooge and Zillebeke bringing back wounded to the Ecole de Bienfaisance. The bearer divisions of field ambulances of the 2nd and 3rd Divisions and the cavalry field ambulances of the 3rd Cavalry Division were also working in very much the same area in certain stages of the battle and bringing back their wounded to No. 3 Field Ambulance. No. 3 Field Ambulance in fact had the task of receiving wounded from all formations fighting south of and to the immediate north of the Menin road. 5,391 sick and wounded had been admitted to it before it was withdrawn on the 6th November.

The 2nd Division.—On the north-east of Ypres the 2nd Division field ambulances opened advanced dressing stations at St. Julien and Wieltje, clearing their wounded to main dressing stations opened by No. 4 and No. 5 Field Ambulances in buildings in Ypres. No. 6 Field Ambulance was in reserve. Wieltje was used as a regulating centre, arrangements being made for two ambulance wagons to remain there and to go forward as required to evacuate the wounded from St. Julien. The bulk of the ambulance wagons were kept at Wieltje, together with the bulk of the bearer divisions, during the period in which the 2nd Division was in action along the line Langemarck-Zonnebeke. On the 24th October they handed over this line to the French, and the bearer divisions of the 2nd Division field ambulances then worked in practically the same area as the 1st Division field ambulances along the Ypres-Menin road and in the area north of it. On the 31st October the headquarters of the 2nd Division were in the château at Hooge when a shell exploded in the château and killed six officers and two other ranks and wounded several other officers including the A.D.M.S., Colonel Holt, and his D.A.D.M.S., Major A. E. S. Irvine, who fortunately were only very slightly wounded.

It is somewhat difficult to follow the operations of the medical units of the 1st, 2nd and 7th Divisions during this phase of the battles. They appear to have been very much mingled together and not assigned to definite and clear-cut areas. Their chief difficulty was to maintain evacuation to and from Ypres to medical posts further back on account of the severe shelling to which Ypres was subjected. The horsed-ambulance wagons had great difficulty in moving along the Menin road; they were obliged to move on the unmetalled borders of the road, and in wet weather were frequently bogged.

The motor ambulance cars were consequently found of great use as they were permitted to move along the centre of the roads.

The Indian Divisions.—The medical units of the Indian Divisions were differently organized from those of the British Expeditionary Force, but when they took over the work, at first on the Neuve Chapelle front and subsequently on the La Bassée front, their field medical units took over the positions occupied by the medical units of the IInd Corps. The details of their organization and the manner in which the medical services of the Indian Contingent amalgamated with the British at this stage have been detailed in Chapter V.

The Clearing Hospitals.—The clearing hospitals during these first battles of Ypres were at St. Omer, No. 1 ; at Bailleul, No. 2 and No. 3 up till the 1st November, when the latter moved to Hazebrouck ; at Poperinghe, No. 4 ; at Hazebrouck, No. 5 ; at Bethune, No. 6 until the 4th November. Bethune had been bombed and shelled since the 31st October, and No. 6 Clearing Hospital was then withdrawn to Chocques and moved to Merville three days later. Two other clearing hospitals, No. 7 and No. 8 and two Indian clearing hospitals joined the Expeditionary Force during this period.

No. 7 Clearing Hospital was a Territorial Force unit mobilized at Leeds on the 4th August when war was declared. It had volunteered for service overseas under Lieut.-Colonel A. F. L. Wear, and was recruited chiefly from men's voluntary aid detachments. It embarked at Southampton on the 31st October. Previous to that time its personnel had been mainly used as a detachment for one of the ambulance trains in the United Kingdom, and as a rest station party and convoy at the railway station at Leeds. On arrival in France it proceeded to St. Omer on the 3rd November, and on the 6th November sent a detachment of three medical officers and twenty other ranks with 100 stretchers and equipment to assist in No. 4 Clearing Hospital at Poperinghe. This detachment was further reinforced on the 12th November by two officers, ten other ranks and fifty stretchers, and worked strenuously there until the 19th November. During the eleven days of work at Poperinghe, 1,226 wounded were admitted to it. At the end of the battle No. 7 Clearing Hospital, after sending a detachment on the 20th November to help one of the Indian clearing hospitals at Lillers, moved as a whole unit to Merville on the 21st November.

No. 8 Clearing Hospital mobilized at the R.A.M.C. Depôt at

Aldershot under Major H. Rogers on the 3rd November, and embarked at Southampton on the 6th November. On the 12th November it arrived at St. Omer and took over work in the jute factory. It remained there until the end of the Ypres battles, when it proceeded on the 21st November to Bailleul.

The two Indian clearing hospitals which arrived on the Flanders front during the battles were the Lahore and the Meerut Clearing Hospitals. The Lahore Clearing Hospital mobilized in Lahore on the 18th August and arrived in Marseilles on the 13th October. It reached the Indian advanced base at Orleans on the 18th October and went forward immediately to St. Omer and Hazebrouck on the 21st October, where a certain number of Indian sick were admitted. On the 25th October it was moved to Bailleul and sent a section to Steenwerck. During the time the unit was at Bailleul it was the only clearing hospital for Indians in the front area and admitted from 1,400 to 1,500 sick and wounded. It had great difficulty in consequence of inadequate personnel. A medical officer and six British orderlies were consequently attached to it on the 28th October, and two additional R.A.M.C. officers and six British orderlies on the following day. The section at Steenwerck returned to its headquarters at Bailleul on the 31st October, and on the same day what was known as the British section* of the unit arrived with complete personnel and equipment from Marseilles, so that from that time onwards the clearing hospital consisted of three Indian sections and one British section. It remained at Bailleul until the 6th November when it was transferred to Merville, where it remained until the 18th November. It moved from there to Lillers when the right sector of the British line was taken over by the Indian Corps.

The Meerut Clearing Hospital mobilized at Poona on the 18th August and arrived at Marseilles on the 12th October and at the advanced base at Orleans on the 18th October. It came up to the Flanders front on the 31st October, and was opened at Bethune under the command of Major W. R. Goodwin, R.A.M.C. On the 4th November, when Bethune was being heavily shelled, the unit was withdrawn to Chocques, where it was established the following day.

The Casualties.—The work of the field ambulances cannot be ascertained in figures from their war diaries, but approximately 3,000 wounded are noted as having been received

* For the organization of the Indian Clearing Hospitals see Chapter V.

by those of the 1st Division up to the 31st October only; and 142 officers and 3,539 other ranks by those of the 2nd Division. The 3rd Division field ambulances record the admissions of 92 officers and 2,639 other ranks in October, but there is no record for November. Those of the 4th Division admitted 2,542; those of the 5th Division 2,502; those of the 6th Division 3,557 up to the 21st November. The 7th Division field ambulances admitted 2,228 in October, but give no record for November. Figures for October only are given, as a rule, in the diaries of the cavalry field ambulances, for the 1st Cavalry Division, 350 wounded, for the 2nd, 175, and for the 3rd, 135.

The records of the admissions to and evacuations from the clearing hospitals during the battles are incomplete, but the following approximate figures were noted for the period from the week ending 26th October to the week ending 23rd November :—

At St. Omer	..	No. 1 Clearing Hospital, admitted 954* and evacuated 884.
At Bailleul	..	No. 2 Clearing Hospital, admitted 8,445, and evacuated 7,714.
At Bailleul	..	No. 3 Clearing Hospital, admitted 2,366§, and evacuated 2,024.
At Hazebrouck	..	No. 3 Clearing Hospital, admitted 655§, and evacuated 916.
At Poperinghe	..	No. 4 Clearing Hospital, admitted 1,630§, and evacuated 2,119§.
At Hazebrouck	..	No. 5 Clearing Hospital, admitted 2,528, and evacuated 2,377.
At Poperinghe	..	No. 7 Clearing Hospital, admitted 1,226‡, no record of evacuated.
At St. Omer	..	No. 8 Clearing Hospital, admitted 495†, and evacuated 490.

The heaviest weeks were the weeks ending 2nd, 9th and 23rd November, when the greater number of the casualties were cleared to No. 2 Clearing Hospital at Bailleul.

At Bailleul the Lahore Clearing Hospital evacuated 1,453 Indians, the number admitted being indefinite. After moving to Merville the work in it was much lighter, only 17 British and 285 Indian admissions being recorded, with practically the same number evacuated. The Meerut Clearing Hospital records show 304 sick and 975 wounded admitted between the 31st October and 11th November at Bethune and Chocques, with 974 evacuated.

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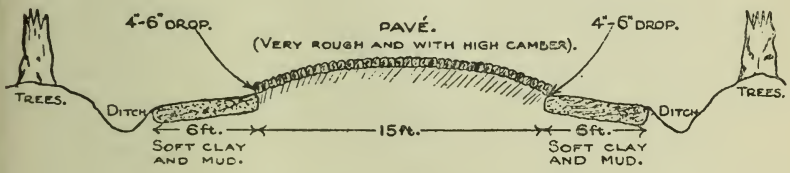
* Three weeks only recorded.
§ Two weeks only recorded.
‡ Eleven days record.
† One week only recorded.
With the exception of the record from No. 4 Clearing Hospital, the figures for evacuation are for the whole period. There is no record of admissions to No. 6 Clearing Hospital.

Motor Ambulance Convoys.—Five motor ambulance convoys were employed during the battles. No. 1 Motor Ambulance Convoy was at St. Omer, with sections at Poperinghe. The work was extremely arduous and at times dangerous, as not only were the cars used in clearing wounded from Ypres and Poperinghe to Hazebrouck and St. Omer, but they had been employed also in clearing from the Ecole de Bienfaisance, a duty which necessitated their passing through Ypres at times when it was heavily shelled. On one occasion, 9th November, three of the cars were hit and two of the patients in them wounded.

The state of the roads added greatly to the difficulty of evacuation from the front by motor ambulance cars, because the roads were congested by French troops and their transport, and the number of ambulance cars available was in any case inadequate. The weather was bad and the construction of



Section of Pavé Road in the Ypres Salient.

the roads in wet weather made them dangerous for motor traffic as shown on the sketch. The surface of the pavé was very greasy and it was very difficult to keep a motor car from sliding off into the ditch even when the road was clear. Skidding and accidents were of frequent occurrence, and motor ambulance cars could only run under these conditions at considerable risk and with much discomfort to the occupants.

No. 2 Motor Ambulance Convoy (B.R.C.S.), under Captain Kelly, R.A.M.C., was at Bethune until the 6th November and then went to Merville, leaving a section at Chocques. It was employed in clearing field ambulances of the IInd Corps to Bethune, and to ambulance trains. When it went to Merville it did similar work behind the IVth Corps.

No. 3 Motor Ambulance Convoy had its headquarters at Bailleul and cleared the field ambulances of the IIIrd Corps to Bailleul and to ambulance trains at Steenwerck and Nieppe, occasionally to St. Omer and Hazebrouck. A section was sent to Ypres on the 23rd October and was employed continuously

there bringing wounded back to Poperinghe. The work of this convoy was particularly heavy and continuous and many of its cars had been sent up to advanced dressing stations.

No. 4 Motor Ambulance Convoy (B.R.C.S.) reached the Flanders front on the 28th October under the command of Major L'Estrange, R.A.M.C. The headquarters section of twenty cars went to Hazebrouck and was employed in clearing the hospitals there to St. Omer. "B" Section of fifteen cars was sent to clear the field ambulances of the Indian Corps under the direction of the D.D.M.S. of the corps, and "C" Section was sent to work under the D.D.M.S. of the IIIrd Corps. From the 1st to 18th November part of the convoy cleared from the IInd Corps and Cavalry divisions. On the 19th November the convoy was concentrated at Chocques and Lillers.

No. 5 Motor Ambulance Convoy arrived at St. Omer from Boulogne on the 5th November. It had been formed and taken to France by Mr. Arthur Du Cros, M.P., who held the rank of captain in the A.S.C. It was placed under the command of Captain Amy, R.A.M.C. Some alterations were required as the frames did not fit the regulation stretcher. Twenty-three of its cars were sent to Poperinghe on the 11th November and were employed in clearing from there to Hazebrouck. Owing to the railway line being required to bring up French troops to Ypres no ambulance trains were allowed to run from Hazebrouck to Poperinghe or Bailleul between the 11th and 14th November, and No. 5 Motor Ambulance Convoy was chiefly employed in clearing from Poperinghe to Hazebrouck by road. The unit was moved to Hazebrouck from St. Omer on the 14th November, and was then employed in clearing the sick from the Ist Corps field ambulances then in reserve in the vicinity of Hazebrouck, and in bringing sick and wounded from the clearing hospitals in Hazebrouck to the railway station.

The Ambulance Trains.—During the whole period of the battles nine ambulance trains were running regularly between the railheads and Boulogne except on eight occasions, when they ran to other bases.* No. 9 Ambulance Train was completed on the 29th October and made its first journey to Poperinghe on the 31st. No. 10 had also been prepared and was ready on the 11th November. It was employed in distributing patients from Boulogne to other bases. The preparation of an eleventh ambulance train (No. 11) at Rouen had been entrusted to the

* To Etaples twice, Rouen four times, Paris and Havre once each.

B.R.C.S., but it was not completed till the 11th December. A twelfth train (No. 12) had been sent from England and arrived on the 5th November, but there was some delay in obtaining the permission of the French railway authorities to run it on their lines. It was employed, however, in the front areas from the 15th November.

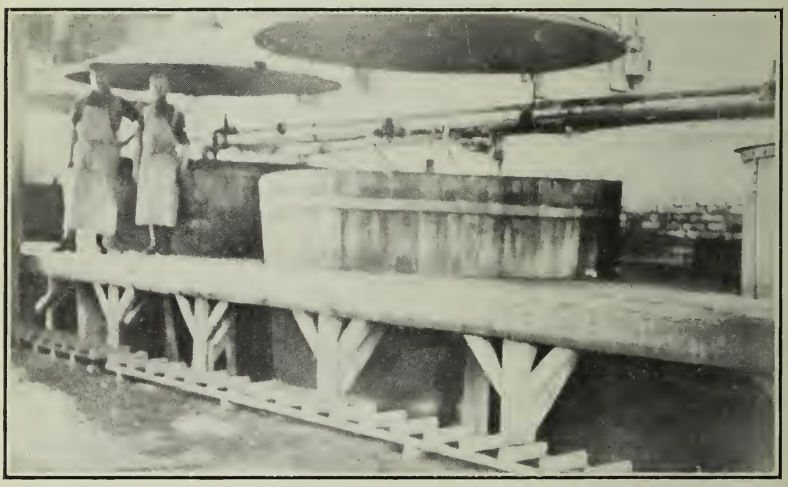
Between the 15th October and 23rd November inclusive the ambulance trains made 140 journeys from the front area to Boulogne or other bases. During that time they carried a total of 37,798 sick and wounded. In 38 of the journeys no record was noted of the proportion lying and sitting but in the other journeys a total of 9,611 were carried lying and 17,316 sitting.

Ambulance trains made 16 journeys to Ypres between the 19th October and 2nd November, after which they no longer ran there, 30 to Poperinghe, 27 to Bailleul, 15 to Hazebrouck, 17 to Bethune, 9 to Chocques, 3 to Steenwerck, 5 to Nieppe, 10 to Merville and 3 to Lillers. The remaining journeys were to St. Omer. On the 26th October and 3rd and 5th November as many as six ambulance trains went to the front areas, and on most of the other days three to five.

The use of improvised trains was noted on seven occasions only; from No. 1 Clearing Hospital on the 24th October (91 patients), on the 31st October (104) and on 1st November (44); from No. 2 Clearing Hospital on 28th October (number not noted); from No. 3 on 3rd November (45); from No. 4 on 31st October (number not noted); and from No. 5 on 3rd November (225). There is no record of the evacuation from No. 6 Clearing Hospital, and no doubt several of its sick and wounded were sent down by improvised or supply trains, but in any case the numbers evacuated by improvised or supply trains were in marked contrast to the numbers sent down by such trains in the preceding period of the war.

During the battles there was at one time very great congestion on the railway line owing to disturbing and abnormal conditions which could not have been foreseen and could hardly have been provided against. An additional French Army Corps was thrown into the area through which the British railway communications ran, and a series of accidents resulted from the excessive strain thus thrown on the railway system during three days from the evening of the 21st October. One hundred and thirty-six extra trains were run in this way on the British L. of C., and this added extraordinary congestion not only on the railways but also on the

roads, in addition to the complication of the situation by a series of bad accidents. The service of the hospital trains was thus much interrupted, and improvised trains had to be rapidly formed at Ypres by making use of the French troop trains which would otherwise have returned empty. Within two hours after their arrival these trains were rearranged, and the *fourgons*, of which they were mainly composed, were quickly disinfected with cresol and filled with clean straw. They were also fully rationed and adequately staffed. These improvised trains were then used for light sitting up cases only, and the wounded were got away in them in comparative comfort. A more ample supply of regular



The "Baths" in Brewery Vats at a Divisional Bathing Centre.

hospital trains or motor ambulance convoys during these three days would have been useless, as they could not have been got through the exceptional block of traffic on both railways and roads. In this connexion and in view of statements which appeared from time to time in the public press and in Parliament it is of interest to note that Sir Arthur Lee reported to Lord Kitchener on the 28th October that "in view of the stories current at home, no cattle or horse trucks have been used by the British at any stage of the campaign for the transport of wounded by rail, the only trucks actually used were luggage or covered goods vans which can be readily adapted in case of emergency and are in many ways most suitable."

The Development of Trench Warfare in 1914.

From the 19th November to the end of the year battle casualties were comparatively few, and the medical services in the front areas were chiefly concerned in dealing with the large numbers of sick, especially men suffering from frost-bite and trench foot, induced by the cold and wet in the trenches; and in opening divisional bathing and disinfecting establishments. The field ambulances occupied more or less permanent positions, being relieved in turn according to the disposition of the formations to which they belonged. They were

A Brewery Vat used as a Bath in a Divisional Bathing Centre.

distributed along the roads from Bethune to La Gorgue and Estaires, from Estaires to Armentières, and at Armentières, Ploegsteert, and Neuve Eglise, and along the Neuve Eglise–Bailleul and Neuve Eglise–Poperinghe road, with advanced dressing stations at points two or three miles in advance.

The 8th Division field ambulances arrived in the front areas on the 12th November, detraining at Strazeele and Hazebrouck, and went to La Gorgue and Estaires, where they were established by the 19th November, throwing out advanced dressing stations to the Estaires-La Bassée road. These field ambulances were numbered 24, 25 and 26, but were the first line Territorial field ambulances of the Wessex Division. They arrived with seven motor ambulance cars and three horse-ambulance wagons each. The 7th and 8th Divisions were at the time re-formed

as the IVth Corps and the D.D.M.S. distributed half of the ambulance cars of the 8th Division to the field ambulances of the 7th Division, replacing them with an equivalent number of horse-ambulance wagons from the latter. At this time it was decided to replace a proportion of the horse-ambulance wagons in all field ambulances by ambulance cars, and a commencement was made by sending one heavy car and three Ford cars to No. 1, No. 2 and No. 3 Field Ambulances on the 3rd, 5th and 9th December. Eventually all field ambulances were provided with seven ambulance cars in place of seven horsed wagons, three of the cars being light Fords ; but this distribution was not completed until the following year.

The movements of the clearing hospitals in the final phase were as follows :—No. 1 Clearing Hospital was moved from St. Omer to Bethune on the 24th December, No. 4 was moved from Poperinghe to St. Omer on the 24th, and from there to Lillers on the 30th November. No. 7 was opened at Merville and No. 8 went from St. Omer to Bailleul on the 21st November. The Lahore Clearing Hospital was at Lillers, the Meerut moved from Chocques to Aire on the 25th December, and a new Indian clearing hospital, the Lucknow, arrived at St. Venant on the 1st December. A ninth clearing hospital (No. 9) had been mobilized in Aldershot under Major P. H. Henderson on the 11th December and crossed to France on the 23rd. It was sent to St. Omer and established there on the 28th December. The positions of the clearing hospitals therefore at the end of the year were as follows :—

No. 1 ..	at Bethune.	Nos. 6 and 7	at Merville.
Nos. 2 and 8	at Bailleul.	Meerut ..	at Aire.
Nos. 3 and 5	at Hazebrouck.	Lucknow ..	at St. Venant.
No. 4 and Lahore	at Lillers.	No. 9 ..	at St. Omer.

The motor ambulance convoys were also distributed as follows at the end of the year :—

No. 1	at St. Omer.
No. 2	at Merville, with a section at La Gorgue.
Nos. 3 and 5 ..	at Bailleul.
No. 4	at Bethune.

There was a considerable amount of disciplinary trouble with the personnel of the motor ambulance convoys provided by voluntary aid organizations. Many of the cars were private cars accompanied by owners and their chauffeurs, and this proved an undesirable arrangement for work in the front areas. A warning had also been received from the French authorities to the effect that German-Americans were coming

to France for work under Red Cross Societies, and on the 16th December an order was issued that all drivers of motor ambulance convoys provided by voluntary aid were to be enlisted in the A.S.C.

The Medical Situation at General Headquarters and on the Lines of Communication.

While the field formations of the Expeditionary Force were thus engaged in operations in Flanders and consolidating their line of trenches at the end of 1914, important changes were being made in the administration of the medical services and on the lines of communication, and modifications were also being introduced into the organization of the medical units. Sir Arthur Sloggett arrived in France on the 28th October as Director-General of Medical Services overseas. He was accompanied by Lieut.-Colonel Burtchaell, the Assistant Director-General, and for some time remained in Boulogne. He proceeded to G.H.Q. at St. Omer on the 22nd November and established his headquarters there on the 30th November, his services being definitely placed by the Army Council at the disposal of the Commander-in-Chief on December 17th.

Surg.-General Macpherson, who had vacated the appointment of Deputy Director-General at the War Office on the 15th October, had preceded him to France and arrived at St. Omer on the 18th October. He was appointed to advise generally on the medical services of the Indian Contingent, whose organization required considerable modifications to enable it to conform with the organization of the medical services of the Expeditionary Force.

Surg.-General Woodhouse, however, continued to hold the appointment of D.M.S. of the Expeditionary Force until the end of the year.

When Sir Arthur Sloggett established his office in St. Omer, Colonel O'Donnell remained in it as D.D.M.S., G.H.Q., for supervision of the medical services of the front areas, with Major S. L. Cummins as D.A.D.M.S., G.H.Q. The effect of this administrative arrangement was that, although Surg.-General Woodhouse was nominally still D.M.S. of the whole force, his administrative work became more and more bound up with that of the L. of C. For administrative medical purposes the appointment of D.D.M.S. on the L. of C. was not revived for some time after Colonel O'Keeffe had left on the 16th September, but Lieut.-Colonel H. G. Barefoot was appointed A.D.M.S., with Major Fell as his D.A.D.M.S., and Major Fawcus as

D.A.D.M.S. for Sanitation; while Colonel S. Hickson was appointed A.D.M.S. of the Southern L. of C. between Marseilles and Orleans, with Major H. R. Bateman as his D.A.D.M.S. The grade of D.D.M.S., L. of C., was restored on the 7th November, Lieut.-Colonel Barefoot being so appointed. These changes in administration have been alluded to in Chapter I.

Surg.-General Woodhouse and the staff of the L. of C. moved from Villeneuve to Abbeville on October 15th, and when the Channel bases were reopened and the Atlantic bases closed, the advanced base was moved from Le Mans to Abbeville on the 9th December, with Lieut.-Colonel J. J. Russell as A.D.M.S. Havre was reopened as an administrative medical base, with Colonel F. W. C. Jones as A.D.M.S., on the 17th September, and Colonel Lynden-Bell returned to Boulogne as A.D.M.S. there on the 16th October. Colonel B. M. Skinner had been sent to Boulogne from England a few days previously, but on Colonel Lynden-Bell's arrival he was transferred to Rouen as A.D.M.S.

At the end of December the whole of the administrative medical service was reorganized, when the five army corps and the Indian Corps were grouped in two army commands, the First and Second Armies, the former consisting of the Ist, IVth and Indian Corps, and the latter of the IInd and IIIrd Corps. The Corps D.Ds.M.S. were then withdrawn and a D.M.S. appointed instead to each of the two armies, Surg.-General Macpherson being appointed to the First Army, and Colonel Porter, who was promoted to the rank of Surg.-General, and who had been D.D.M.S. of the IInd Corps, to the Second Army.

At G.H.Q. Sir Arthur Sloggett reorganized his office with Colonel O'Donnell, promoted to the rank of Surgeon-General, as D.M.S. for front areas, Lieut.-Colonel Burtchaell as Assistant Director-General, Major Birrell as A.D.M.S. for personnel, Major Cummins as D.A.D.M.S., and Major Black as staff officer. Surg.-General Woodhouse was then appointed a D.M.S. of the L. of C., with Lieut.-Colonel Barefoot as his D.D.M.S. Colonel S. Hickson remained at Marseilles as D.D.M.S. of the Southern L. of C.

Towards the end of September 1914 Colonel Arthur Lee, M.P., had been sent to France by Lord Kitchener to watch the work of the medical services and keep him informed regarding it, and Sir Walter Lawrence, a retired member of the Indian Civil Service, came to France in December on a similar mission in connexion with the medical services with the Indian Contingent.

The decision to close gradually the Atlantic L. of C. was made on the 9th October, although not definitely ordered until the 27th October. It was sometime, however, before the hospital bases on this line were abandoned. Angers was the first to close, when its two hospitals, No. 5 General and No. 4 Stationary left on the 7th November. The latter replaced at Nantes No. 9 General Hospital which had been ordered to Rouen on the 9th November. Nantes was closed as a base early in December, when No. 4 Stationary Hospital was transferred to St. Omer to open as a convalescent depôt in the jute factory. All the hospitals at St. Nazaire had left by the 19th November, No. 3 General Hospital being the last to close. Le Mans alone of the Atlantic L. of C. retained a hospital until the end of the year. No. 5 Stationary Hospital remained open there although it was under orders to move to Abbeville and Dieppe. No. 10 Stationary Hospital remained at Orleans until the end of October, when it was transferred to St. Omer.

When the decision to close the Atlantic hospital bases was made, Surg.-General Woodhouse drew up a scheme for establishing the chief medical base at Calais, with subsidiary bases at Havre, Boulogne and Rouen, but this scheme was abandoned on the 16th October, and Boulogne then became the most important base for medical work. Four general and four stationary hospitals, providing 3,080 beds, were originally intended for this base, but by a decision of G.H.Q. only three general, Nos. 11, 13 and 14, and three stationary hospitals, Nos. 7, 13 and 14, or 2,310 beds were first permitted to open there by the end of October. No. 2 Stationary Hospital was subsequently added to the number at the beginning of November.

At Rouen, Nos. 8 and 12 General Hospitals were open before the close of the battle of the Aisne, and other hospitals were being transferred there from the Atlantic bases, so that by the time the whole Expeditionary Force had reached Flanders there opened in Rouen, in addition to No. 8 and 12 General Hospitals, No. 10 General Hospital and No. 11 Stationary Hospital, and early in November No. 6 General and Nos. 3, 8 and 12 Stationary Hospitals. Additions continued to be made to the number of hospitals in Rouen during November and December, and by the end of the year six general hospitals, Nos. 5, 6, 8, 9, 10 and 12, and four stationary hospitals, Nos. 1, 3, 11 and 12, were open. No. 8 Stationary Hospital was also at Rouen, acting for a time as a convalescent depôt for Indians, but when the depôt was definitely taken over by an Indian hospital unit, No. 8 Stationary Hospital was closed pending its eventual transfer to Boulogne.

At Havre, two general hospitals, Nos. 1 and 2, were also open before the close of the battle of the Aisne, and by the end of October No. 9 Stationary Hospital was opened there as a venereal hospital. In December No. 1 General Hospital was moved to Etretat, and No. 6 Stationary Hospital was sent to Havre in its place. No other hospitals were added to the Havre base.

Towards the end of November No. 2 Canadian Stationary Hospital, which had disembarked at Havre and Boulogne, was established at Le Touquet. This was the first Canadian medical unit to arrive in France.

No. 3 General Hospital, which had been parked at Rouen for some time, was ordered to Le Treport at the end of November and opened there early in December.

Consequently the chief hospital bases for the Expeditionary Force at the end of the year were Boulogne, Rouen and Havre, with minor hospital centres at Calais, Abbeville, Le Treport, Etretat and St. Omer, where, too, a large convalescent depôt was opened.

In addition to the general and stationary hospitals of the Expeditionary Force and the Canadian Stationary Hospital, several voluntary hospitals were placed at these various bases. At Boulogne an Allied Forces Base Hospital was opened in the Hotel Christol. It had arrived in Paris in October and was opened in Boulogne by the end of the month. The Australian Voluntary Hospital, which had been at St. Nazaire, also went to Boulogne and opened at Wimereux early in October. Two other voluntary hospitals with a small number of beds also went to Wimereux, namely Sir Henry Norman's and a Women's Corps Hospital, the former having opened there early in November, and the latter some two weeks later. The Duchess of Westminster's Voluntary Hospital which went to Paris at the same time as the Allied Forces Base Hospital was transferred to Boulogne, but did not open there. It went instead to Le Touquet, where it opened early in November.

The British Red Cross Society's hospital, which had left Paris after the retreat from Mons, was opened at Rouen early in October, and a Scottish Red Cross hospital, which had also gone to Paris but did not open, was ordered to Rouen at the end of October and was attached to No. 11 Stationary Hospital early in November. A small Red Cross Society's hospital was also opened at Abbeville about the middle of November.

There was some misunderstanding regarding the conditions

under which the voluntary hospitals had opened, as several of them did so on verbal authority only and without the knowledge or orders of the D.M.S.

Six or seven voluntary hospitals had also been receiving sick and wounded in Paris and Chantilly, and had a number of sick and wounded in them varying from 1,000 in the early period of the operations to between 100 and 200 at the end of the year.

The situation with regard to the various Indian hospitals has been given in more detail in Chapter V.

With regard to the base depôts of medical stores, No. 1 was established at Boulogne, No. 2 at Havre, and No. 3 at Rouen. No. 2 had remained at St. Nazaire until about the middle of November, but Nos. 1 and 3 had been transferred from the Atlantic to the Channel bases by the time the Expeditionary Force had taken up its line in Flanders.

Of the advanced depôts of medical stores, No. 2 and No. 3 had been sent to railheads in Flanders when the Expeditionary Force was moving there, and had opened at one time or another at Hazebrouck, Poperinghe or St. Omer, until they were finally established at Bailleul and St. Omer respectively. No. 1 Advanced Depôt had remained at Le Mans until the middle of November, when it was ordered to Rouen. It was employed at Rouen until the 17th December, when it was parked and sent to Abbeville on the 23rd of the month.

Two new sanitary sections and eight new sanitary squads (Nos. 12 to 19) were organized, partly from men of the St. John Ambulance Brigade and partly from men unfit for service at the front. Two of the new sanitary sections, No. 3 and No. 4, were completing their training at St. Nazaire early in October, and No. 3 was sent to Havre on the 10th and No. 4 to Boulogne on the 18th October, the latter being transferred for work at Bailleul and Hazebrouck at the end of the month. In addition to these, a section of the 1st City of London Sanitary Company of the Territorial Force arrived at Boulogne on the 17th October and was sent to Rouen. The sanitary squads, which had been working at railheads and at Villeneuve, Le Mans and Rouen until the withdrawal of the British from the Aisne, were distributed to railheads in Flanders and to the bases, including Orleans and Marseilles. Thus at the end of the year the sanitary sections and sanitary squads were distributed as follows :—

At Rouen	.. ..	Sanitary Section No. 1, and 1st City of London.
At Havre	.. ..	Sanitary Section No. 3.

At Boulogne	.. ..	Sanitary Section No. 2, and Sanitary Squad No. 19.
At Bailleul	.. ..	Sanitary Section No. 4 (with squad at Hazebrouck).
At Orleans	.. ..	Sanitary Squads Nos. 1, 2, and 3.
At Marseilles	.. ..	Sanitary Squad No. 4.
At Le Mans	.. ..	Sanitary Squad No. 18.
At Abbeville	.. ..	Sanitary Squads Nos 11, 12 and 13.
At St. Omer	.. ..	Sanitary Squads Nos. 5 and 6.
At Railheads	..	Sanitary Squads Nos. 7, 8, 9, 10, 14, 15, 16 and 17.

The prevalence of enteric fever and the sanitary conditions in the towns and villages in Flanders came into prominence after the troops had settled down into trench warfare. Enteric fever was found to be widely distributed throughout the area especially amongst Belgian refugees in the Calais area, amongst French civilians in the Dunkirk area, in other parts of France, and also amongst the enemy forces. As it appeared impossible to deal adequately with the sanitation of trenches in the weather conditions then obtaining, it was feared that the British would probably suffer from a severe epidemic of the disease. Inoculations against enteric fever were not being carried out with any marked success before reinforcements left from England in consequence of an organized campaign against inoculations which was then in progress chiefly by means of prominent advertisements in the press. In consequence of this state of affairs it was decided to appoint sanitary sections to divisions in the field, and towards the end of December other sections of the 1st and sections of the 2nd London Sanitary Companies arrived in France and were sent to the front for distribution to divisions. In the meantime special efforts were made to improve the sanitary condition of Bailleul, No. 4 Sanitary Section being sent there, as noted, for this purpose.

Lieut. Rowland, with the first mobile bacteriological laboratory to which reference has been made in the previous chapter, arrived at St. Omer as soon as G.H.Q. went there, and a mobile hygiene laboratory under the charge of Captain Coplans arrived in France and went to G.H.Q. on the 24th November.

In addition to Colonels Sir Anthony Bowlby and G. H. Makins, several other eminent consulting surgeons, physicians and specialists were attached to the British Expeditionary Force during this period, notably Colonels Sir Wilmot Herringham, Sir J. Rose Bradford, Sir A. E. Wright and S. F. Burghard. They arrived in France on the 22nd October and were posted as consultants to Boulogne and Rouen. Colonel Sir Wilmot Herringham subsequently moved to G.H.Q. as consulting physician for the front areas. Colonel W. T. Lister also arrived as a consultant in ophthalmology, and was appointed to Boulogne on the 20th November.

Among other changes in organization, it was decided on the 28th October to appoint five nursing sisters to each clearing hospital. Clearing hospitals were also allotted three lorries each during October, and fifty pairs of trestles for converting their stretchers into raised cots were sanctioned at the end of November. Further, groups of five medical officers in base hospitals in Boulogne were ear-marked for reinforcing clearing hospitals in cases of emergency, and 200 convalescents unfit for service at the front were placed in training at Boulogne to act as stretcher bearers in similar circumstances.

Dental surgeons commenced to arrive in France early in November and were allotted to clearing hospitals and to the bases. An eminent dentist, M. Valadier, a citizen of the United States, who had been sent from Paris to Abbeville by the B.R.C.S., was also accepted for duty with the British troops on the 29th October. He was eventually given a commission as major in the British army and established a dental clinic at Boulogne, which he conducted in an honorary capacity throughout the war.

On the 31st December 1914 the number of sick and wounded in medical charge of the British Expeditionary Force in France was 223 officers and 13,508 other ranks, together with 17 German sick and wounded. Included in these numbers were 156 cases of enteric fever, 45 cases of suspected enteric fever, 85 other infectious diseases, 4 cases of tetanus, and 1,230 cases of venereal disease. The number of vacant beds at that time in the various hospitals was 6,777, the total hospital accommodation being over 20,000, including the clearing hospitals and the Indian and voluntary hospitals.

CHAPTER XVI.

THE PERIOD OF TRENCH WARFARE.

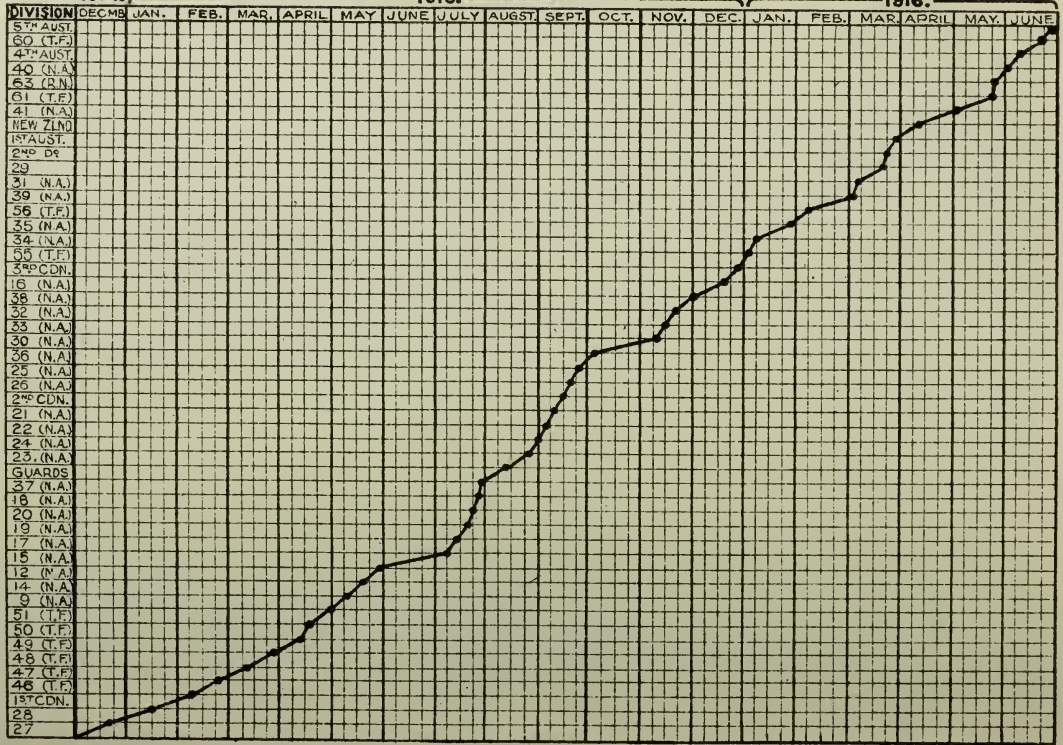
THE period of trench warfare on the Western front, as defined by the committee appointed by the Army Council in August 1919 to tabulate, classify and define the geographical and chronological limits of actions fought in the war, lasted from the breaking off of the first battle of Ypres in November 1914 to the commencement of the offensive on the Somme in July 1916. This period was characterized by a great expansion in the strength of the Expeditionary Force. Four divisions of regular troops, twenty-seven of the new armies, ten of the Territorial Force, one of the Royal Navy, three Canadian, four Australian and one New Zealand division, as well as South African and other Dominion or Colonial formations and units were added to the divisions already in France and Belgium. Three of the divisions of regular troops, the 27th, 28th and 29th, were composed of units withdrawn from garrisons overseas. The 27th Division had joined the Expeditionary Force by the end of December 1914, and the 28th Division during the following month, but the 29th Division did not come to France until after its withdrawal from the Dardanelles at the end of 1915. The fourth division of regular troops was the Guards Division, composed partly of units of Foot Guards already in France and partly of Guards battalions from England. It was formed in August 1915. The Royal Naval Division was composed of the three infantry brigades which had gone to Antwerp in October 1914, together with divisional troops subsequently organized. After Antwerp it had been sent to Gallipoli, and it, too, did not come to France until after the withdrawal from the Dardanelles. The New Army divisions had been mobilized and trained in the United Kingdom and arrived in France between May 1915 and June 1916. The Territorial Force divisions began to arrive earlier, between February 1915 and June 1916.

The 1st Canadian Division crossed to France in February, the 2nd in September, and the 3rd in December 1915, and the Australian and New Zealand divisions in March, April and June 1916. The latter divisions had previously taken part in the operations in Gallipoli.

CHART

SHOWING THE DIVISIONS IN CHRONOLOGICAL ORDER ADDED TO THE BRITISH EXPEDITIONARY FORCE ON THE WESTERN FRONT BETWEEN JANUARY 1915 & JUNE 1916.

(Period of trench warfare)



Malby & Sons, Lith.

The accompanying chart shows the progressive chronological increase in divisions which were added to the Expeditionary Force during the period of trench warfare.

There was no increase or decrease in cavalry divisions. The two Indian cavalry divisions remained in France until March 1918—renamed the 4th (Indian) and 5th (Indian) Cavalry Divisions in November 1916—but an eighth cavalry brigade was added to the Cavalry Corps in 1914, and a ninth cavalry brigade in May 1915.

There were also great additions to the strength of artillery and flying corps arms, as well as to that of other branches of the service.

During this period six divisions were transferred from the Western front for service in other theatres of war. The 22nd, 26th, 27th and 28th Divisions formed the Expeditionary Force which was sent to Macedonia in November and December 1915, and the Lahore and Meerut Divisions left France for Mesopotamia also in December 1915. Consequently the maximum strength of divisions on the Western front before the period of the Somme offensive was 52

This increase of strength led to some twelve new British Corps, as well as the Canadian and Anzac Corps, and two new Armies and a Reserve Army being formed with a corresponding extension of the length of front held by the British in France and Belgium. The Third Army was formed on the 11th July 1915, and at first comprised the VIIth and Xth Corps, the former composed of the 4th and 6th Divisions, and the latter of the 5th, 18th and 51st Divisions. It took over from the French the Somme sector in front of the line Amiens–Doullens. The Fourth Army was formed on the 5th February 1916 and took over in March the Xth and XIIIth Corps, the former then composed of the 32nd, 36th, 48th and 49th Divisions, and the latter of the 7th, 18th and 30th Divisions. It relieved the Third Army, which, in its turn, replaced the French Army, which had up till then been interposed between the First and Third Armies on the Arras front. The British line was then continuous from Ypres to the Somme, and was held from north to south by the Second, First, Third and Fourth Armies. The Reserve Army, which subsequently was named the Fifth Army on 30th October 1916, was formed on the 22nd May 1916, and at that time was composed of cavalry divisions only. Before that date it had been organized as the Reserve Corps.

The Indian Corps ceased to exist on the transfer of the Meerut and Lahore Divisions to the East. Its headquarters staff became the headquarters staff of the XVth Corps in December 1915, but it was re-numbered the XVIIth Corps in January 1916, and a new XVth Corps was formed in France in April 1916.

The Indian Cavalry Corps also ceased to exist as such. On the 12th March 1916 its divisions became part of the Cavalry Corps.

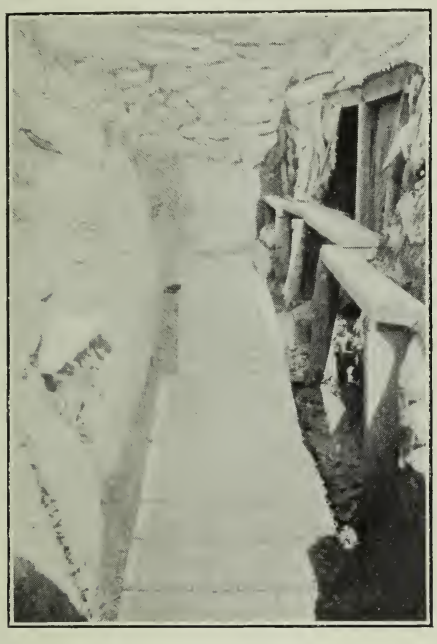
Although the period up to the battle of the Somme is defined as the period of trench warfare, it included battles of great

A waterlogged trench.

magnitude and several minor and subsidiary actions. The battle of Neuve Chapelle was fought in March ; the second battle of Ypres in April and May ; the battle of Festubert and Aubers Ridge in May, and the battle of Loos in September 1915. In 1916, prior to the Somme offensive, local actions took place in the Ypres front in February, March and April ; a German attack was made on the Vimy Ridge in May, and an action of the magnitude of a battle took place at Mont Sorrel in the Ypres sector in June 1916.

Weather and Sickness.

The weather was specially cold, wet and foggy during the winter of 1914-15, with more or less fine weather during the summer and autumn months following. The winter of 1915–16 was less severe, and for a considerable time in December there was clear, dry and frosty weather succeeded by rain. As contrasted with the battles of later periods, it may be said generally that weather did not materially interfere with the actions that took place, but weather conditions were an



Trench showing men's sleeping quarters.

important factor, especially in the winter of 1914–15, in causing inefficiency. Frost-bite and "trench foot" created an immense amount of sickness during that time. Otherwise there was no marked increase in sickness, nor was there any definite epidemic, although much anxiety was felt during the widespread prevalence of enteric fever amongst the Belgian civil population in Flanders and amongst the troops of the French armies in the sectors taken over by the Third and Fourth Armies. The measures taken for dealing with enteric fever amongst the civil inhabitants of the areas occupied by the British in Belgium

were of a drastic nature, and received the support of the Belgian authorities. A detailed account is given in Appendix C. A new disease also appeared in the form of what was called, at the time, trench nephritis. It first appeared in February 1915, and the disease as time went on became gradually more and more prevalent.

The Indian troops too, were constantly suffering from mumps, a disease which was never thoroughly eradicated from amongst their units.

Cerebro-spinal fever had been the cause of much inefficiency amongst troops in training in the United Kingdom, and it was feared that, in the overcrowded state of billets during the winter in France and Belgium, it would become extremely prevalent amongst the troops in the field. Although many cases occurred, the disease did not, however, assume any definite epidemic character.

The only other prominent cause of inefficiency during the period was venereal disease, for which special venereal hospitals had to be opened at the bases. As venereal disease cases were not permitted to be evacuated to England, these hospitals had to be greatly expanded to accommodate the large number of cases which accumulated in France.

Administrative Changes.

The administrative changes which took place in the medical services at the end of 1914 have already been described. Few other changes occurred until November 1915, when the Expeditionary Force for Salonika was being sent from France, and again in the spring of 1916 when G.H.Q. was transferred from St. Omer to Montreuil. In November Lieut.-Colonel E. T. F. Birrell left the D.G's. staff to join the administrative medical staff of the Salonika Force as A.D.M.S., and his place was taken as A.D.M.S., G.H.Q., by Lieut.-Colonel C. K. Morgan from the headquarters of the First Army.

Some changes also took place in the personnel of the administrative medical services in the divisions and armies at that time. Colonel W. W. Pike, promoted to the rank of Surg.-General, was appointed D.M.S. of the First Army in place of Surg.-General W. G. Macpherson, who had been appointed D.M.S. of the Expeditionary Force proceeding to Salonika, and certain changes took place in the A.Ds.M.S. of the divisions which were being sent from France to Salonika. Thus, Colonel Holt, who had been A.D.M.S. of the 2nd Division, was transferred to the 22nd Division.

When G.H.Q. went to Montreuil, at the beginning of 1916, the D.G.'s office was dislocated and was then carried on in two echelons, as already described.*

Increase in Medical Units.

Field Ambulances.—The medical units which came to France during the period of trench warfare consisted of three field ambulances with each of the new divisions. The field ambulances of the three divisions formed of regular troops namely the 27th, 28th and 29th Divisions were provided by the Territorial Force R.A.M.C.; those of the 27th Division by the three first line field ambulances of the Home Counties Division; those of the 28th Division by two first line field ambulances of the London Division and one of the Northumbrian Division; those of the 29th Division by first line field ambulances of the West Lancashire, East Anglian and Highland Divisions. They were numbered 81, 82 and 83 for the 27th Division; 84, 85 and 86 for the 28th Division; and 87, 88 and 89 for the 29th Division.

The Guards Division field ambulances were Nos. 3, 4 and 9 Field Ambulances, which had been transferred for the purpose from the 1st, 2nd and 3rd Divisions respectively. They were replaced in these divisions by No. 141, No. 19 and No. 142 Field Ambulances. The 19th Brigade accompanied by No. 19 Field Ambulance had taken the place in the 2nd Division of the Guards Brigade when the latter was withdrawn with No. 4 Field Ambulance to form part of the new Guards Division.

With the exception of the three field ambulances of the 21st Division, Nos. 63, 64 and 65, and one field ambulance, No. 98, of the 30th Division, which were first, second or third line Territorial Force field ambulances of the West Lancashire Division, the field ambulances, which accompanied the divisions of the new armies, were new units mobilized in the training centres of the R.A.M.C.

The Territorial Force divisions took with them three field ambulances of their first, second or third line, with the exception of the West Lancashire and London Divisions, which had already been depleted of their field ambulances for employment with new army divisions. Consequently the 55th (West Lancs.) Division had one, and the 57th (2nd West Lancs.) Division two of its field ambulances from the Wessex Division; while the 58th (London) Division was provided with field ambulances from the Home Counties.

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* See Chapter I.

The field ambulances with the Royal Naval Division were numbered 148, 149 and 150. They had been originally the 1st, 2nd and 3rd Royal Naval Field Ambulances, and had been mobilized as such for service with the Mediterranean Expeditionary Force when the Royal Naval Division went to the Dardanelles.

New cavalry field ambulances were No. 8 and No. 9, the former being originally the 1st Yorkshire Mounted Brigade Field Ambulance, and the latter a cavalry field ambulance mobilized in the R.A.M.C. Training Centres.*

With the Canadian Contingent there were fourteen field ambulances, one of which, No. 7, was designated a cavalry field ambulance. Nos. 11, 12 and 13 Canadian Field Ambulances with the 4th Canadian Division did not arrive in France until August 1916, during the period of the Somme offensive. Nos. 1, 2 and 3 came with the 1st Canadian Division; Nos. 4, 5 and 6 with the 2nd Canadian Division; Nos. 8, 9 and 10 with the 3rd Canadian Division. No. 7 Canadian Cavalry Field Ambulance was attached to the Canadian Cavalry Brigade and embarked for France in May 1916. No. 14 Canadian Field Ambulance only reached England during the summer of 1918.

The field ambulances with the Australian Divisions were Nos. 1 to 15, representing the field ambulances of five Australian divisions, of which, as noted above, four had arrived in France before the Somme offensive. The field ambulances of the 3rd Australian Division, which did not arrive until after the battle of the Somme, were Nos 9, 10 and 11 Australian Field Ambulances.

With the New Zealand Division there were three New Zealand field ambulances, Nos. 1, 2 and 3.

A South African field ambulance arrived in France in May 1916 with the South African Brigade, which took the place of one of the brigades of the 9th Division, in that month. The South African field ambulance then replaced No. 29 Field Ambulance in that division.

All these field ambulances and cavalry field ambulances arrived in France with ambulance transport consisting of seven motor ambulance cars and three horse-drawn ambulance wagons. Three of the ambulance cars, or one per section, were light ambulance cars on Ford chassis. Otherwise the

* A complete list of the various field ambulances with dates of arrival in France is shown in Appendix A. of Vol. III. of the General History of the Medical Services.

organization had not been altered from the original organization in War Establishments issued in 1914. A new unit, the field ambulance workshop, for the repair of the twenty-one motor ambulance cars with the field ambulances of the division, was attached to the headquarters of each division.

Casualty Clearing Stations.—Clearing hospitals were officially designated Casualty Clearing Stations in January 1915. This alteration in name was suggested originally by Colonel Arthur Lee,* who was watching the work of the medical services on behalf of the Secretary of State for War, in a letter to Lord Kitchener dated 12th October 1914, in which he stated that the description of the unit as a hospital was misleading, and that if it were called a clearing station instead of a clearing hospital less would be expected of it by wounded and critics alike. Acting on this suggestion the War Office eventually altered the designation of clearing hospital to that of "casualty clearing station," by which the unit was subsequently known throughout the war.

A casualty clearing station was mobilized to accompany each of the new divisions, so that by the time the Somme offensive commenced the number of casualty clearing stations in France was the same as the number of divisions. They were not, however, under divisional administrative control or command, but were directly under the control of the headquarters of the armies to which they were allotted, and were administered directly by the Ds.M.S. of the armies concerned. They did not move from one army to another with their divisions. Those mobilized with the Territorial Force divisions which came to France were, in some instances, mobilized as casualty clearing stations of the new armies, but in the majority of cases they were casualty clearing stations mobilized by Territorial Force County Associations and retained their Territorial Force designations, although they were also given a consecutive number, thus, Nos. 46 and 47 were first line casualty clearing stations of the Wessex and Home Counties Divisions, and Nos. 50 and 51 first line casualty clearing stations of the Northumbrian and Highland Divisions respectively. But the numbers allotted to these Territorial Force casualty clearing stations were not given to them in the earlier months of their service in France, and did not correspond chronologically with the dates of their arrival in the country, or with the divisional number allotted to the division which they accompanied. For example, the casualty clearing station of

* Now Viscount Lee of Fareham.

the North Midland Division which came to France in February 1915 with the division was eventually designated No. 53 Casualty Clearing Station, whereas the division became the 46th Division.

When the First Army was formed at the end of 1914 the casualty clearing stations allotted to it were Nos. 1, 4, 6, 7, Lahore, Meerut, and Lucknow Casualty Clearing Stations. The Meerut Casualty Clearing Station, however, was used specially for the reception of sick and wounded from the Indian Cavalry Corps in the neighbourhood of Aire. It had been established there on the 27th December 1914 after its withdrawal from Bethune and Chocques. Additional casualty clearing stations allotted to the First Army in 1915 were: in March the 1st Canadian, in April the 2nd London (No. 54), in May the Highland (No. 51), in June the West Riding (No. 58), in July No. 9, in August Nos. 18, 22 and 23, in September No. 33, and in October No. 32; but when the Third Army was formed, No. 4, the Highland (No. 51) and the Lucknow Casualty Clearing Stations were transferred to it towards the end of July and the beginning of August 1915. The Lahore and Meerut Casualty Clearing Stations left France in December 1915 with the two Indian divisions.

Nos. 2, 3, 5 and 8 Casualty Clearing Stations were allotted to the Second Army. The casualty clearing stations subsequently added in 1915 were No. 10 in January, the North Midland (No. 53) in March, the South Midland (No. 61) in April, No. 12 and the Northumbrian (No. 50) in June, and Nos. 15 and 17 in July. No. 5 and the South Midland were transferred to the Third Army in July and August 1915.

In the first six months of 1916, in consequence of the formation of the Fourth and Reserve Armies, a further distribution of casualty clearing stations had to be made, especially in connexion with the preparations for the Somme offensive. The First Army during these six months had allotted to it twelve casualty clearing stations namely, Nos. 1, 6, 7, 9, 18, 22, 23, 32, 33, 58, 54, and the 2nd Canadian Casualty Clearing Station. The last replaced, in January 1916, the 1st Canadian Casualty Clearing Station which had been transferred to the Second Army with the 1st Canadian Division. The Second Army had Nos. 2, 8, 10, 12, 15, 17, 50, 53, the 1st and 3rd Canadian, and the 1st Australian Casualty Clearing Station by June 1916. No. 3 had been transferred in March 1916 to the Fourth Army. The casualty clearing stations with the Third Army during the whole of the six months were Nos. 19 and 30 and a

section of the Lucknow Casualty Clearing Station. Nos. 4, 5, 21, 29, 51 and 61 had been transferred from it to the Fourth Army, and had been replaced by Nos. 37, 41 and 42 in February, No. 43 in March, and No. 20 in May 1916.

The Fourth Army, on its formation, thus acquired at the end of February 1916 Nos. 4, 5, 21, 29, 36, 51 and 61 Casualty Clearing Stations, had No. 3 and a section of the Lucknow Casualty Clearing Station added in April, and also received in May Nos. 34, 38, 39, 44 and 45, and in June Nos. 11 and 35.

The Reserve Army previous to the commencement of the Somme battles had not been organized with casualty clearing stations.

During the whole period of trench warfare, both the original and new casualty clearing stations were in more or less permanent positions, and gradually added to their accommodation and equipment. They had thus developed into large and important units, capable of dealing with great numbers of wounded. With the exception of the addition of a dental surgeon to each early in 1915, and the increase in the number of nursing sisters of the Q.A.I.M.N.S. from five to seven, the establishment, however, had not been enlarged.

In the Second Army it was not possible to establish casualty clearing stations in Poperinghe or other towns, where sufficient building accommodation was available, owing to the enemy's artillery fire. Consequently a special site for casualty clearing stations was selected on the railway line, about two miles south-west of Poperinghe, after the second battle of Ypres. This became the large centre for casualty clearing stations, which was subsequently known as Remy Siding, and was the first occasion on which casualty clearing stations were placed where ambulance trains could come directly up to them. A similar arrangement was made when No. 18 Casualty Clearing Station was allotted to the First Army before the battle of Loos, a site for it having been selected alongside the railway line at Lapugnoy, some two miles south of Chocques. In other localities casualty clearing stations were either in buildings or in tents at some distance from entraining stations, and a special distribution of cars of motor ambulance convoys had consequently to be allotted for local use in transferring sick and wounded from the casualty clearing stations to the ambulance trains.

The general situation of the casualty clearing stations in connexion with the battles of the trench warfare period are noted in the detailed description of the work of the medical

services during these battles. Generally speaking, they were that element in the work of the medical services during battle which had a strategical character, as the localities where they were established were selected with special reference to the situation likely to arise in connexion with the operations, not only as regards the facilities for bringing wounded from the field ambulances to them, but also with regard to the evacuation of wounded from them by the ambulance trains.

Motor Ambulance Convoys.—The scale of motor ambulance convoys, which was more or less adhered to, was in the proportion of one for each corps and one as an army reserve, in addition to the convoy retained at G.H.Q. The number of motor ambulance convoys consequently increased as the number of corps increased, and by October 1915 there were sixteen convoys in France. But it was considered that there should be at that time at least eighteen, distributed as follows :—

1 at G.H.Q. ;
6 with the First Army, consisting at that time of five corps ;
5 with the Second Army, of four corps ;
4 with the Third Army, of three corps, and
1 each with the Cavalry and Indian Cavalry Corps.

The cars of several of the convoys had been provided by voluntary gifts ; such as the magnificent convoy of cars forming No. 7 M.A.C. which had been presented by the Maharajah of Gwalior and the cars of No. 8 M.A.C. from Scottish burghs and counties and some Scottish institutions.

Many additions were made to the equipment of the convoys in order to provide greater comfort to the wounded while being conveyed in the cars ; thus, in November 1915 a winter scale of blankets and hot water bottles was authorized, making a total of 600 blankets and 100 hot water bottles for each convoy.

Towards the end of 1915 the personnel of the convoys provided by the Joint War Committee of the B.R.C.S. and Order of St. John, namely, Nos. 2 and 4, were replaced by enlisted men. The employment of men under no military obligation in the front areas did not prove satisfactory, as some of them came and went as they liked. But there was another and serious difficulty in the interests of the men themselves. They were called upon, especially during the second battle of Ypres, to perform duties involving considerable danger, but as they were not enlisted soldiers, they were not entitled to the gratuities or pensions to their families for loss of life or to themselves for injuries, provided by the Royal Warrant. Many of them, when the decision was made to employ only enlisted soldiers

with motor ambulance convoys, were enlisted into the A.S.C. Those who did not accept enlistment ceased to be employed in army areas.

With regard to the general formation of the voluntary convoys, much difficulty arose from the fact that they were composed of several different patterns of cars and it became necessary, as far as possible, to have only one type of car in each convoy.

In addition to the voluntary gifts of cars forming motor ambulance convoys, a number of motor ambulance cars were presented for work with divisions, and, as far as possible, were placed with the field ambulances of divisions to which the donors were anxious that they should go. Several of these were presented by Indian princes and nobles. Thus, the establishment of ambulance cars of the field ambulances of the Lahore Division was completed by cars presented by the Rana of Barwani and by Jind. The Kathiawar States provided the ambulance cars and workshop unit for a complete field ambulance. They were originally intended for the 2nd Indian Cavalry Division, but, as it already had its full number of motor ambulance cars, the Kathiawar States cars were sent to the Meerut Division. In order that these ambulance cars which were presented for the use of the Indian Expeditionary Force might be kept with the Indian troops, when the Lahore and Meerut Divisions were transferred from France to the East, an exchange of ambulance cars was made between them and the divisions in the Indian Cavalry Corps which remained in France. Two magnificent ambulance cars were also presented by Their Majesties the King and Queen, for use with the Indian divisions.

Ambulance Trains.—With regard to ambulance trains, a demand was made in February 1915 for a total of twenty-four ambulance trains based on the strength of the troops in France at that time, and on the organization of evacuation by two lines of communication, the northern and southern. But at the time of the battle of Loos the strength of the force had greatly increased, and, as a still larger increase was anticipated in the future, a proposal for twelve additional ambulance trains was then made. By the end of 1915 the actual number running between the front and the bases and between the various hospital centres was twenty, Nos. 1 to 24, less Nos. 13, 19, 20 and 23, which had not arrived in France. Some of these trains were specially constructed for France by voluntary gifts, No. 15 being a

train which was designated "Princess Christian's Hospital Train" constructed and organized on the same lines as a similar train sent to South Africa during the South African war, and Nos. 16 and 17 being gifts of the United Kingdom Flour Millers. No. 14 was constructed in Birmingham for Lord Michelham and presented to the British Expeditionary Force.

For the administration of the ambulance trains, Lieut.-Colonel J. S. Gallie was appointed on the 7th March 1915 to control the working of those based on Boulogne, and Major W. Riach those based on Rouen. Later on, in August 1915, Lieut.-Colonel Gallie became a D.A.D.M.S., subsequently

No. 15 Princess Christian Ambulance Train.

designated A.D.M.S., for ambulance trains at headquarters of the L. of C. with D.A.Ds.M.S., as before, for the northern and southern lines.

From the 1st July onwards the control of the running of ambulance trains which had been carried out previously by the D.G.M.S. office at G.H.Q. was decentralized, and the Ds.M.S. of the First and Second Armies respectively were made responsible for arranging direct with the A.Ds.R.T. of the southern and northern railway groups for the trains they required.*

Definite instructions were issued in the form of standing orders in October 1915 for improvised ambulance trains, in

* See Chapter II.

order to ensure that patients being brought down in them were provided with sufficient rations, blankets and other equipment during the journey. These orders were issued in consequence of complaints that had been made in connexion with the running of improvised trains on the 25th and 30th September in connexion with the battle of Loos. Frequent halts had been at that time impossible during the journey to the bases, as they would have interfered with the traffic of other trains proceeding with supplies, reinforcements and ammunition to the armies.

Ambulance Flotillas.—The ambulance flotillas, formed of six barges each, were organized during 1915 for use on the canals between the British front and the base. No. 1 Ambulance Flotilla has already been noted as working on the Seine between Paris and Rouen, but it was never employed to any great extent, and its utility more or less lapsed when Paris ceased to be on the line of evacuation for British casualties; but on the canal between Calais, St. Omer, Aire, La Bassée and Merville, and later, on the Somme, it was decided to form definite military medical units with an organized staff and personnel, and the four new ambulance flotillas were eventually formed of barges converted into hospital wards with kitchen, dispensary and accommodation for medical officers, nursing sisters, R.A.M.C. personnel and navigating personnel, as already described.

Sanitary Sections.—In addition to the field ambulances, the field ambulance workshops and the casualty clearing stations which mobilized with each of the new divisions, divisional sanitary sections, were also mobilized and proceeded to France with the divisions. These sanitary sections were organized from the London Sanitary Companies of the Territorial Force R.A.M.C., and consisted of one officer and twenty-five other ranks each, with a motor lorry for the transport of their equipment. They commenced to arrive in France at the end of 1914 for the divisions already there. They were employed under the administrative control of the A.D.M.S. of each division and moved with the division. Their work was chiefly concerned in improving the sanitary condition of billets and in the preparation of sanitary constructions. Although the units were R.A.M.C. units, in many cases the officers commanding them were not qualified medical officers, but sanitary engineers and similar sanitary experts. Their services as such were of great value, especially in improvising and constructing various sanitary appliances and in preparing plans. The number

of sanitary sections and sanitary squads was increased on the lines of communication ; two sanitary sections were provided for Etaples and one for Dannes Camiers during 1915.

One great advance in sanitation was effected during this period. The disposal of fæcal matter by the shallow trench system, as recognized in the Manual of Military Hygiene and Field Service Regulations failed, and it became necessary to adopt other measures. Incineration consequently took the field and became an invaluable factor in the prevention of filth borne diseases.

Mobile Laboratories.—A definite allotment of mobile laboratories was fixed in May 1915, the proportion being one hygiene

Latrine Incinerators at West Riding Casualty Clearing Station, Lillers.

and two bacteriological laboratories for each army, with a light motor car attached to each. The number of mobile laboratories was consequently increased in accordance with this scale.

Mobile X-ray laboratories were also provided for the first time during this period ; the first was a mobile X-ray equipment presented by the ladies of Cheltenham College. It was attached to No. 10 Casualty Clearing Station on the 25th May for work in the Second Army. A mobile X-ray laboratory was also sent to the First Army about the same time. The former was in the form of an X-ray outfit fitted on to a lorry, the latter was a smaller type of car fitted out as a laboratory.

Hospital Accommodation.

As the armies in France increased in size so it became necessary to increase the amount of hospital accommodation on the lines of communication and at the bases. The site for a large hospital centre was consequently selected at Etaples and Dannes Camiers, some three miles distant on the Boulogne road. The Etaples hospital centre, including Dannes Camiers and voluntary hospitals in Le Touquet, then became the largest hospital centre for the British troops in France.

The Etaples hospital centre was occupied on 24th March 1915 by No. 18 General Hospital at Dannes Camiers, and was rapidly added to by eight other general hospitals during May and June, including amongst others No. 1 and No. 3 Canadian General Hospitals, and the two units, Nos. 22 and 23 General Hospitals, staffed by Harvard and Chicago voluntary personnel from the United States of America.

The Duchess of Westminster's Hospital (No. 1 B.R.C.S. Hospital) had been established in Le Touquet in December 1914, and shortly afterwards No. 2 Canadian Stationary Hospital opened in the golf hotel there. At that time they were under the administration of the A.D.M.S., Boulogne. The original intention was to make the new hospital centre on the racecourse at Le Touquet, but there were difficulties regarding water supply, drainage and railway facilities. Construction of the Etaples site was commenced in February 1915, and the ground at Dannes Camiers was selected then for hospital extension. At first these sites were intended solely for hospital purposes, but when the new army formations were being sent to France by the Folkestone–Boulogne route, reinforcement and rest camps were also formed in the Etaples area, and subsequently led to several raids on it by enemy aircraft. The fact, too, of the Etaples Hospital Centre being close to important railway communications exposed it to enemy raids.

Le Treport also became a large hospital centre.* In addition to No. 3 General Hospital, which went there at the end of 1914, it included No. 16 and No. 2 Canadian General Hospitals.

In this way by the end of 1915 there were twenty-two British general hospitals in France, that is to say, Nos. 1 to 26, less Nos. 15, 17, 19 and 21, which were in Egypt ; three Canadian general hospitals and six Indian general hospitals, of which three were organized as British hospitals.

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*See plan facing p. 73.

There were no additions, however, to the British stationary hospitals, Nos. 13 and 14 having arrived by the end of 1914; but as noted above, No. 2 Canadian Stationary Hospital was at Le Touquet at the end of 1914, and No. 1 Canadian Stationary Hospital went to Wimereux in February and remained there until July 1915, when it went eventually to Mudros and Salonika. A Canadian stationary hospital, No. 4, was also open at the end of 1915 and in 1916 near Paris for the French. It became No. 6 Canadian General Hospital at the end of June 1916 and another Canadian General Hospital, No. 8, also went to Paris at that time for duty with the French.

All the general hospitals sent out from 1915 onwards were mobilized for 1,040 beds instead of the 520 of the general hospitals of the original Expeditionary Force. The stationary hospitals were also increased from 200 to 400 beds each.

Two of the general hospitals, Nos. 22 and 23, at Dannes Camiers and Etaples, were staffed by personnel from America, the former by personnel from Harvard University, and the latter from Chicago, as already noted. The Chicago medical unit proceeded to France on the 2nd July 1915 under the command of Colonel C. G. Harrison, R.A.M.C. It consisted of thirty-three American doctors and seventy-five nurses; they received pay and allowances of similar ranks of the R.A.M.C. and the Q.A.I.M.N.S. The Harvard unit was placed under the command of Lieut.-Colonel Sir A. Perry, a retired officer of the R.A.M.C., and went to France on the 17th July 1915 Its personnel agreed to serve for three months, but several of them continued to serve for longer periods. Those who returned to America were replaced by officers of the R.A.M.C. and by nursing sisters of the Q.A.I.M.N.S. The personnel of the Chicago unit offered their services until the middle of December 1915 and then extended their services for a further period of six months, those who had to return to America being replaced, as in the case of the Harvard unit, by R.A.M.C. and Q.A.I.M.N.S. personnel.

Convalescent Depôts.

A large number of convalescent depôts was opened on the lines of communication during 1915. No. 1 at Boulogne, No. 2 at Rouen and No. 4 at Havre, together with the Indian Convalescent Depôt at Rouen, were already in existence, and to these were added No. 3 at Le Treport in August, No. 5 at Wimereux in July, No. 6 at Etaples in June, and No. 7 at Dannes Camiers in August. Two additional convalescent

depôts for Indians, Nos. 8 and 9, were opened in 1915 at Boulogne and Marseilles in April and March respectively. The depôt for Indians at Rouen was closed in April.

Personnel for Medical Services.

With regard to personnel for the medical services, as time went on the shortage, especially in medical officers, became more and more marked, a condition of affairs which was felt throughout the war. At the end of 1915 the attention of the War Office was drawn to the large shortage of medical officers compared with the number allowed by War Establishments, a shortage which was most marked in the case of regular officers, who from time to time had been transferred from the Expeditionary Force in France in compliance with requests from the War Office. The total deficiency at that time was approximately 200, and it was estimated that the average wastage monthly in medical officers was about fifty. The question of reducing the establishments of units had been seriously considered. This question of establishments and reinforcements cropped up from time to time during the war in connexion with the armies in France, and it may be stated generally that from 1915 onwards at no time were the medical units working with their full establishments, notwithstanding the fact that the accommodation provided in them was greatly increased.

Consequent upon the danger of reducing the number of regular officers in units, especially in the front line units, instructions were issued in April 1915 that in future, so far as possible, not less than three regular R.A.M.C. officers should be employed in each field ambulance, two in each cavalry field ambulance, and one in a battalion of each infantry brigade and in a regiment of each cavalry brigade ; also that not less than three regular officers should be employed in each general hospital and two in each stationary hospital.

Medical Supplies.

There was only one addition during the period to the base depôt of medical stores, No. 6 being opened at Etaples in July.

In connexion with medical stores, an important addition was made to the first field dressing by the issue of a large dressing to cover extensive shell wounds. Dressings of this kind were issued in March 1915 in special haversacks and distributed to regimental units and field ambulances.

The question of standardizing splints was also brought up in 1915, when a meeting of consultants was held at No. 1 Base Depôt Medical Stores in October, and a list of special splints required by field ambulances and casualty clearing stations tabulated. A further standardizing of splints took place subsequently in 1916, owing to the large accumulation of splints, that were never used, in some of the advanced depôts of medical stores. Special sets of surgical equipment for casualty clearing stations were devised by Sir Anthony Bowlby, known as the "Bowlby outfits," and these were sent to France early in September 1915.

Reserves of blankets and stretchers were kept at St. Omer. On 7th May 5,400 blankets and 2,000 stretchers, together with three complete sets of equipment for improvised ambulance trains were held by No. 20 Field Ambulance there for replenishing medical units in army areas in an emergency and during battle. Three groups of personnel were earmarked for the three improvised trains when required.

Voluntary Aid.

Much assistance was given to the nursing services by the introduction of members of Women's Voluntary Aid Detachments into the base hospitals in France. They served on a six months' agreement, which could be renewed for further periods, if necessary. By the end of the year some 350 members of Women's V.A.Ds. were then serving in France.

The motor ambulance convoy for work at Calais was formed by the First Aid Nursing Yeomanry Corps, and was recognized officially at the end of the year. It consisted of a commanding officer, eighteen drivers and three orderlies, all women. The convoys employed at the various hospital centres at other bases, such as Etaples, Le Treport, Rouen, were also chiefly formed by women working under the Joint War Committee of the B.R.C.S. and Order of St. John. Several members of Voluntary Aid Detachments of the St. John Ambulance Brigade and of the B.R.C.S. were also employed as personnel on ambulance trains, or motor ambulance convoys.

The number of voluntary hospitals permitted to open in connexion with the British troops in France was increased, and they were given consecutive numbers. No. 1 Red Cross Hospital (The Duchess of Westminster's), 260 beds, as already noted, went to Le Touquet and remained there. No. 2, with 178 beds for officers, was the British Red Cross Hospital which had opened at Rouen in 1914 and also remained there;

No. 3 Red Cross Hospital, 50 beds, went to Abbeville in February 1915; No. 4 Red Cross Hospital (Sir Henry Norman's), 100 beds, was open throughout the year at Wimereux; and No. 5 Red Cross Hospital (Lady Hadfield's Anglo-American Hospital), 100 beds, was also opened at Wimereux. No. 6 Red Cross Hospital, 200 beds, was the gift of the Liverpool Merchants and was opened in Etaples at the end of March 1915. No. 7 Red Cross Hospital (Allied Forces Base Hospital), of 84 beds, which had been at Boulogne in 1914, went to Etaples in July 1915, but was definitely closed in December. No. 8 Red Cross Hospital (Baltic & Corn Exchange Hospital) of 200 beds, was opened at Paris Plage in July 1915. In the same month the St. John Ambulance Brigade sent a hospital of 520 beds to Etaples. There were, however, several other voluntary hospitals in France to which numbers had not yet been given; the Australian Voluntary Hospital, 200 beds, which it will be remembered had originally gone to St. Nazaire, remained open during the whole of 1915 and to the end of the war in Wimereux, having become a regular military stationary hospital, No. 32, as already noted. The Scottish Red Cross Hospital continued open at Rouen as a section of No. 6 General Hospital. The voluntary hospitals which had been open in Paris during operations on the Aisne and which had been used for the reception of British sick and wounded all ceased to receive British patients at the end of March 1915.

In connexion with the work of the Joint War Committee of the B.R.C.S. and the Order of St. John, the honorary and local ranks of Captain and Lieutenant, without pay and allowances, were given to eight of the officials in charge of the Joint Committee's departments under their Commissioner at Boulogne in July 1915.

During the battle of Ypres in May 1915 a travelling kitchen had been attached to each of the Canadian field ambulances. They provided a hot meal to some 10,000 wounded passing through the field ambulances during the fighting, and were so much appreciated that a suggestion came from the Second Army to have similar travelling kitchens attached to other field ambulances, but there were military objections to this.

Several offers were made of soup kitchens for use in the field; some of them, however, were the cause of considerable trouble, while others proved of very great value. In April 1915 the Q.M.G. agreed that motor kitchens might be attached in the proportion of one for each motor ambulance convoy, but this

did not come into general use. Where they were provided, however, they were much appreciated. The chief objection to them was that they blocked the roads, and, although a convenience, they were not a necessity. Consequently the Adjutant-General in October 1915 expressed the opinion that they should not be allowed to come to France. One of the chief difficulties connected with kitchens was that objection had been raised by the enemy to the effect that they provided hot soups to troops going into or out of the trenches, but steps were taken to prevent motor kitchens used for this purpose being marked with the Red Cross.

Eventually much of this work was carried on by the Y.M.C.A., whose representatives opened buffets for refreshments alongside many of the divisional collecting stations for walking wounded during the battles.

Liaison with the Allies.

A more or less complete and cordial liaison was established with the French army medical authorities. Not only did French medical officers visit from time to time the British front, but a special mission arrived on the 29th June 1915 at G.H.Q. and visited the Second Army. The mission consisted of Inspector-General Chavasse, the Director-General of the French Armies in the Field, accompanied by four other officers and an officer of administration as secretary.* The second mission, which included M. Justin Godart, the Under-Secretary of State for the Army Medical Service, accompanied by Inspector-General Chavasse, and three other medical officers,† visited the British Army zone on the 16th September 1915, the Etaples and Dannes Camiers hospital centre and the medical units of the First Army area. A return visit was paid to the whole of the French front at the end of August and beginning of September by the Director-General, Sir Arthur Sloggett, accompanied by the D.M.S. of the First Army (Surg.-General W. G. Macpherson), Colonel Sir William Leishman, Lieut.-Colonel S. L. Cummins and Major R. B. Black. They were

* Médecin Principal 1re Classe Basseres, Méd. Chef. de l'École de Guerre.
Médecin Principal 2me Classe Chauffard, Prof. Fac. Méd. de Paris.
Médecin Major 1re Classe Teissier, Armée Territorial, Prof. Fac. Méd. de Paris.
Médecin Major 2me Classe Chevasse, Prof. Agregé de la Fac. Méd. de Paris, and
Off. d'Admin. 3me Classe Boret, Secrétaire.

† Médecin Major 1re Classe Teissier.
Capitaine (Méd. Major 2me Classe) Julia.
Lieut. (Méd. Aide Major 1re Classe) Lotard.

shown the medical services at work in the French army zones from their front line opposite Nœux-les-Mines right down to the Swiss frontier, and visited in several places the French line of trenches and their most advanced regimental aid posts. The chief lessons learnt were the importance of having special evacuation trenches allotted for bringing back the wounded, and the advantage of performing urgent surgical operations in specially fitted operation rooms as close to the front line as possible. In one instance, on the Lingeweiler Kopf in the Vosges, a perfectly equipped operating theatre for abdominal wounds was seen in a dugout in the hillside, some 800 yards from the enemy lines. In other situations a special unit, the Automobile Chirurgicale ("Autochir"), was employed at main dressing stations. It consisted of X-ray, sterilizing and operating room equipment on three lorries, with tentage. In the ensuing battle of Loos it will be seen that advantage was taken of this experience to allot trenches for evacuation of wounded and to organize advanced operating centres for abdominal and other serious wounds, demanding immediate operation.

Another outcome of this visit was the introduction of steel helmets into the British army. These were first seen in use amongst the French troops. The French medical authorities considered that the helmets used by their troops had proved of the highest value and were greatly appreciated by the men. In consequence of the information obtained during the visit the Director-General advised the issue of similar helmets to the British troops. About this time proposals had also been made for the protection of the various parts of the body by means of special armour, such as a woven steel body belt to minimize the danger of bayonet wounds, and fire-proof protection against flame projectors, but suggestions of this kind were found impracticable.

Development of Gas Warfare.

The history of the measures taken by the medical services to protect the troops from poison gas and to establish methods of treatment of gas cases are fully described in the chapters on the medical aspects of gas warfare in the second volume of the Diseases of the War. From the time when gas was first discharged against the British troops on the 22nd April 1915, the medical services both in France and in the United Kingdom were constantly engaged in solving the problems of protection against the various forms of poison gas used by the enemy, and

also in perfecting the arrangements and equipment necessary for the treatment of gassed cases in field ambulances and casualty clearing stations. Memoranda were prepared and issued by the D.G.M.S. on the subject from time to time, and a variety of articles likely to alleviate the suffering of those who were gassed was issued to the medical units, such as oxygen and ammonia capsules, for use in advanced dressing stations and regimental aid posts. A central laboratory was established in France for experimental work and analyses under Professor W. Watson in June 1915, and this laboratory was in constant touch with scientists engaged in research on similar lines in England, as well as by means of chemical experts, attached to the headquarters of armies, in the front areas. When a directorate of gas services was formed under the General Staff at G.H.Q. in 1916, Lieut.-Colonel S. L. Cummins from the D.G.M.S. staff was appointed to it as an assistant director of gas services for defensive gas work in March, but in June of the following year the appointment of a R.A.M.C. officer as assistant director of gas services lapsed, and Lieut.-Colonel Douglas was attached to the directorate as physiological expert and also to continue the close association of the defensive side of gas operations with the directorate of medical services.

The period of trench warfare ended on the 1st July 1916 with the commencement of the battles of the Somme. The medical arrangements before, during and after the battles of Neuve Chapelle, Festubert and Aubers Ridge, the Second Battle of Ypres, and the battle of Loos which were fought during this period, and the minor actions in 1916 previous to the battles of the Somme, are described in the following chapters of this volume, and in the first chapter of the succeeding volume.

CHAPTER XVII.

THE BATTLE OF NEUVE CHAPELLE.

THE battle of Neuve Chapelle was fought by the IVth Corps (7th and 8th Divisions) and the Indian Corps (Lahore and Meerut Divisions) of the First Army, and took place between the 10th and 13th March 1915. The intention of the First Army Commander was to force the enemy's lines in the vicinity of Neuve Chapelle and drive back hostile forces from the line Aubers–Ligny le Grand, with the object of cutting off the enemy troops which were holding the front between Neuve Chapelle and La Bassée ; in other words, to secure the Aubers ridge, the edge of which was just reached by the British Expeditionary Force on its advance into Flanders in 1914.

Previous to the attack the Meerut Division was on the right, occupying about 1,500 yards of trenches along the Rue du Bois to its junction with the La Bassée road and then for some 900 yards up that road to its junction with the Rue des Berceaux. The Lahore Division was behind it in reserve east and west of the Estaires-Bethune road. The headquarters of the Meerut Division was at Vieille Chapelle, and of the Lahore Division at Calonne. The 8th Division had its original front, which extended to Fauquissart, shortened and was on the left of the Meerut Division from the Estaires–La Bassée road to the junction of the Rue Tilleloy with the road from Mauquissait to Rue du Bacquerot. The 7th Division had previously occupied the front from Fleurbaix to Le Tilleloy, but had handed over its trenches to the 1st Canadian Division, which had joined the First Army from the Second Army on the 3rd March, and took over the line from Picantin to the left of the IVth Corps. Both the 2nd Division, on the extreme right of the British line, and the Canadian Division, on the extreme left of the First Army, were to make auxiliary attacks to divert attention from the main attack. They were not, however, intended to be pushed home. The 1st Division was not actively engaged, but was kept in readiness to take advantage of any signs of retirement on the part of the enemy. It was occupying trenches between the 2nd Division and the Indian Corps.

The line dividing the direction of attack between the Indian Corps and IVth Corps ran from the road junction

at the southern end of Neuve Chapelle to La Cliqueterie Farm. The Indian Corps was to attack south of this line through the Bois du Biez to Ligny le Grand, and the IVth Corps north of the line through Pietre to Aubers. The 7th Division was to assemble one of its brigades, with another in support, behind the attacking brigade of the 8th Division and whenever Neuve Chapelle had been carried these brigades were to advance and deploy for a combined attack on Pietre and Moulin du Pietre, while the remaining brigade, which was holding the line of trenches on the left, was to be ready to advance through Chapigny to the Rue d'Enfer and Aubers. The 2nd Cavalry Division was at the disposal of the G.O.C., IVth Corps, in the neighbourhood of Estaires, ready to take advantage of the situation should a break through be effected.

The assault of the enemy's trenches was made at five minutes past eight on the 10th March after a preliminary bombardment. The attacking brigades of both the Meerut and 8th Divisions succeeded in clearing the enemy out of Neuve Chapelle by the afternoon. The Meerut Division pushed on then towards Bois du Biez, but it was nearly dark before positions on the river des Layes, which flowed across the line of advance between the Bois du Biez and Neuve Chapelle were held. Some of the troops, however, reached the edge of the wood, but all had eventually to dig themselves in along the line of the river for the night. After Neuve Chapelle had been occupied the leading brigade of the 7th Division which was assembled behind the attacking brigade of the 8th Division was moved forward and deployed, ready to advance on Moulin du Pietre as soon as the 8th Division continued its progress. This advance, however, was held up in front of Moulin du Pietre.

On the 11th March the advance of the Meerut Division through the Bois du Biez was prevented by mist in the early morning, and by the holding up of the IVth Corps at Moulin du Pietre. Both the 7th and 8th Divisions had attempted to make headway, but no material advance resulted, and counter-attacks were made against them from the north-west of the Bois du Biez.

Misty weather continued on the 12th March and again interfered with the advance, which was to have been resumed by the Meerut Division, reinforced by two brigades of the Lahore Division, at 11 a.m. The enemy had made strong counter-attacks on it but had been driven off with heavy losses in the early morning. On the Meerut Division attempting to go forward it suffered severely from enfilading

fire on both flanks owing to the inability of the IVth Corps to advance. In the afternoon orders were issued for the advance to be pushed on with the utmost vigour and at all costs. The Lahore Division then replaced the Meerut Division and was ordered to advance at 10.45 p.m. The IVth Corps was, however, making no progress, and shortly before the time when the advance on the Bois du Biez was to take place, the Army Commander stopped all further active operations and directed the positions gained to be consolidated. The battle then came to an end, but the work of the medical services in connexion with it was necessarily prolonged for some days afterwards.

The area of severe fighting was confined to the vicinity of Neuve Chapelle, but the enemy's artillery searched the roads leading to the Estaires–La Bassée road west of Neuve Chapelle and to the Rue du Bacquerot on the north, so that the whole of the zone bounded by these roads was under fire and added to the dangers of collecting the wounded, many of whom remained to be brought in after the attacks on the enemy's lines had ceased, and while the enemy still continued to shell the approaches. The ground over which the battle was fought was flat and intersected with water channels from the river des Layes. The back areas were equally flat and destitute of cover from physical features and dead ground, where wounded could be collected and ambulance transport come up with comparative safety. Dugouts for regimental aid posts and advanced dressing stations, which were such a prominent feature in later battles, had scarcely begun to be constructed. Houses and farm buildings were consequently used for dressing stations. They gave some protection from rifle fire and shrapnel, but on more than one occasion advanced dressing stations were driven out of them by high explosive shells. The advanced dressing station for Indians, for example, was partially destroyed by a shell on the 17th March and several of the wounded killed. It was only by the gallantry of an officer of the R.F.A., Captain Dunbar, who himself was killed while rescuing the wounded, and of Lieutenants A. G. Biggam and E.P. Stratford, R.A.M.C., W. C. Paton, I.M.S., Assistant-Surgeon A. G. Fraser, I.S.M.D., and Private A. Whiteur of the 1st Batt. West Riding Regiment that the survivors were brought to the safety of the dugout of an artillery position near by.

Medical Preparations for the Battle.

This was the first engagement during the war which assumed the character more or less of a prepared battle. It was

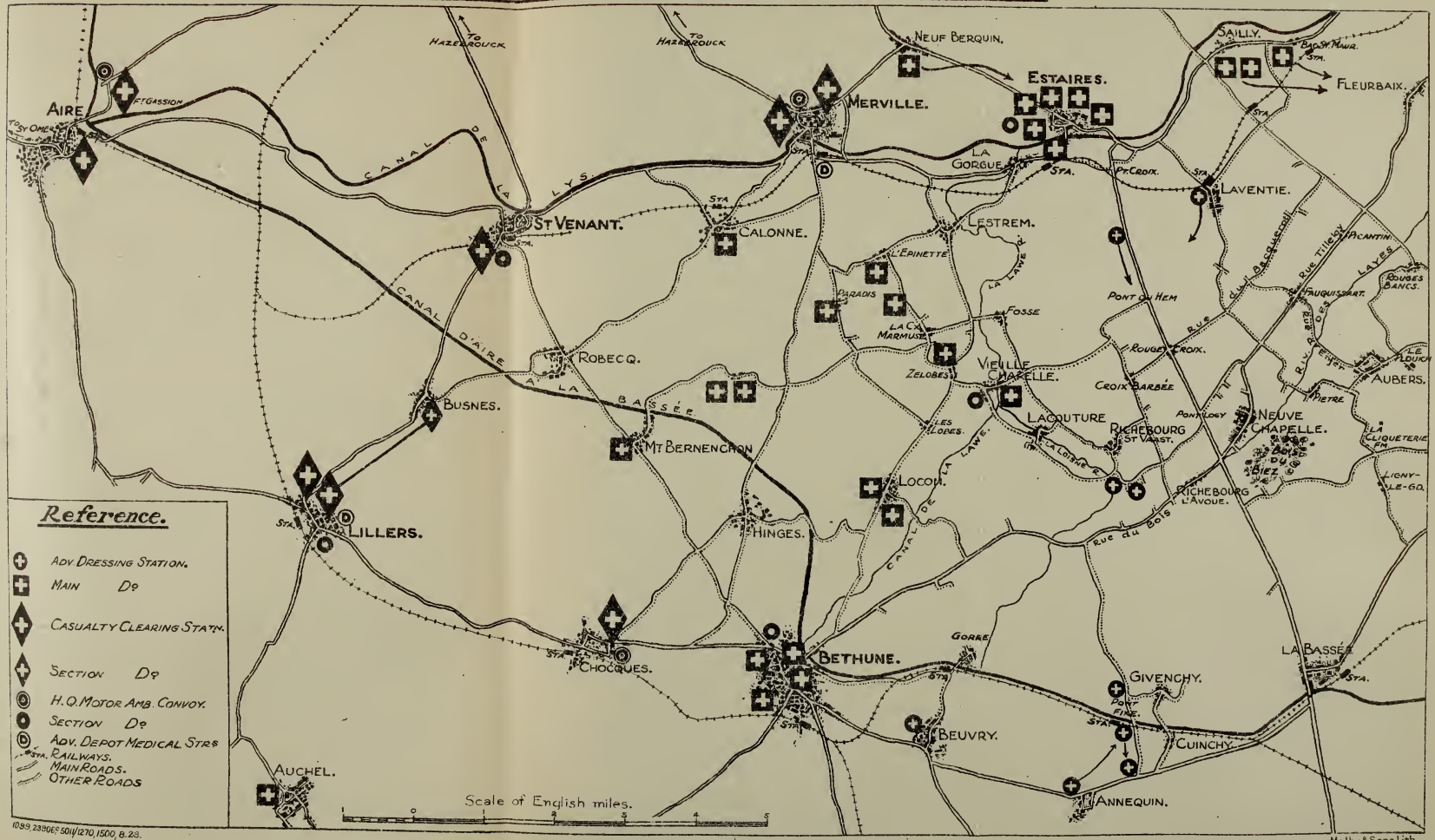
possible, therefore, to make careful arrangements for the medical services. The D.M.S. of the First Army had under his command at the beginning of March 1915 four British, one Canadian and two Indian casualty clearing stations, three motor ambulance convoys, one British and one Indian advanced depôt of medical stores, and a mobile bacteriological laboratory with two R.A.M.C. officers on duty in it. Each division had its field ambulances, and, with the exception of the Indian divisions, a sanitary section, but they were only partially provided with motor ambulance transport. The Indian Corps had only the two motor ambulance cars which had been presented to it by Their Majesties the King and Queen.

In order to build up a strategical situation which would enable the medical services under his control to deal with the anticipated number of casualties, the D.M.S. made special preparations prior to the battle. At the beginning of March the sick and wounded from the various regimental units were being evacuated through the field ambulances of their divisions to casualty clearing stations. From the Ist Corps they were being sent to Chocques and Lillers, and from the IVth Corps and Canadian Division to Merville. The British field ambulances of the Indian Corps east of the Merville–Hinges Road were being cleared to Merville, and the Indian field ambulances to St. Venant; while British and Indians from the field ambulances of the Indian Corps west of that road were being sent to Lillers and Busnes, where there was a section of the Lahore C.C.S. for Indians only. Minor cases of sickness and wounds were being retained for three to five days in the field ambulances, and were only evacuated from them if then unfit for duty. They were retained in casualty clearing stations for seven to ten days more if likely then to be fit for duty; but convalescents not yet fit for duty were being sent to the convalescent depôt opened by No. 4 Stationary Hospital at St. Omer, the Ds.M.S. of the First and Second Armies being informed daily by the D.G.M.S. staff of the amount of accommodation vacant for convalescents from each army.

The casualty clearing stations which were in full working order were No. 1 C.C.S. at Chocques, No. 4 and the Lahore C.C.Ss. at Lillers, Nos. 6 and 7 at Merville, the Lucknow C.C.S. at St. Venant, and a section of the Lahore C.C.S. at Busnes. Fort Gassion, an old fort just outside Aire, which had been a French military prison before the war and had from time to time been occupied as billets for British troops, was taken over by the D.M.S. for medical units early in March,

BATTLE OF NEUVE CHAPELLE.

SITUATION OF MEDICAL UNITS OF 1ST ARMY ON THE 10TH MARCH 1915.



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Malby & Sons Lith.

and the Canadian C.C.S. which had been sent to the First Army from the lines of communication on the 6th of the month was being got ready in it. A convalescent depôt for Indians was also in process of formation in the tobacco depôt at Aire, and had been placed in charge of a section of the Meerut C.C.S. which had been attached to the Indian Cavalry Corps after its transfer from Chocques and had been opened in a convent building in Aire.

The three motor ambulance convoys were Nos. 2, 7 and 8. They were being used for clearing the field ambulances to the casualty clearing stations and for evacuating sick and wounded from the latter to ambulance trains or to the convalescent depôt at St. Omer. Each convoy had fifty motor ambulance cars distributed as follows :—

No. 2 M.A.C.	30 cars at Merville, a section of 15 cars at Estaires, and a group of five cars at St. Venant.
No. 7 M.A.C.	35 cars at Chocques, and a section of 15 cars at Lillers.
No. 8 M.A.C.	At Fort Gassion. It had only arrived in the First Army on the 4th March.

The advanced depôts of medical stores were No. 1 at Merville, and the Bombay at Lillers. The bacteriological laboratory was also at Lillers.

The health of the army was exceptionally good previous to the battle and for some time only one ambulance train was required to come up daily to the First Army area for clearing the casualty clearing stations.

The D.M.S. First Army based his arrangements on an estimate of 30,000 wounded should the operations continue over a period of ten days, or an average of 3,000 daily. The number of possible casualties amongst officers during the same period was estimated at 700, or 70 daily. Consequently the casualty clearing stations were expanded to meet these demands, the accommodation in them being increased on the eve of the battle from 2,250 to 3,470, chiefly at Merville, Lillers, St. Venant and Aire. The accommodation for wounded officers was also increased from 65 to 100. Thirty beds were added to the accommodation for them already at Merville, forty beds were prepared at Lillers, and forty beds in a French auxiliary hospital at Bethune. These officers' wards were equipped with hospital beds and a staff of nursing sisters was allotted to each.

Efforts were also made to improve the accommodation available for the field ambulances of the 1st Division, which, at that time, was occupying the area on the right of the Indian

Corps in advance of Locon, and one of its field ambulances was eventually provided with accommodation in Bethune in the 2nd Division area.

Preparations were made for one of the field ambulances of the 2nd Division to act as a casualty clearing station in Bethune, should it be found necessary or possible to send ambulance trains there. In the event of additional accommodation being required, the Meerut C.C.S. at Aire was placed by G.H.Q. at the disposal of the D.M.S.

Another point which was of considerable importance in the preparations for the battle was the method adopted for dealing with the slighter cases of sickness who were filling the divisional field ambulances. Corps Commanders were asked to arrange to remove them as convalescents to billets instead of evacuating them on the eve of the battle to casualty clearing stations. It was foreseen that, should a large number of slighter cases of sickness or wounds suddenly be transferred to casualty clearing stations on the eve of an engagement, the officers commanding the clearing stations, in order to keep their accommodation free, would immediately send them away to the base in the first ambulance train that arrived, and in this manner not only would an ambulance train journey be lost for the wounded but the base hospitals would be filled with trivial cases of sickness, which, in their turn, would probably be immediately transferred to England and lost to the army.

With regard to special equipment a large number of blankets and stretchers was sent to railheads from G.H.Q., and each casualty clearing station was instructed to indent for 200 palliasses in addition to what they already had. This material was being kept at St. Omer in readiness to be sent up whenever required. The surgical material in each of the advanced depôts of medical stores was increased to meet the requirements for 10,000 wounded, and instructions were given by the D.M.S. of the First Army for advanced depôts of medical stores to maintain the supply of surgical material at that level constantly.

In order to keep the roads clear for the evacuation of sick and wounded, an army order was issued to the effect that the supply columns were to complete the service of supply between 6 a.m. and noon, and that from noon to 6 a.m. the roads were to be used by the motor ambulance convoys. The hour of noon was selected for the commencement of the work of the convoys because it was recognized that the wounded, at any rate those unable to walk, would not begin to arrive in the field ambulances until some three or four hours after the

assault was launched, and it was considered that if the motor ambulance convoys were worked continuously from noon to 6 a.m. congestion of the field ambulances would be avoided. To meet these arrangements the cars of the motor ambulance convoys were redistributed. The five cars of No. 2 Convoy at St. Venant were withdrawn and rejoined their headquarters at Merville. Ten cars of No. 7 Convoy were placed at the disposal of the Meerut Division to supplement the horse drawn ambulance wagons of its field ambulances. The section of the convoy at Lillers was sent to Bethune for entraining or other duties should it be possible to use Bethune for ambulance trains. A section of No. 8 Convoy (fifteen cars) was sent to St. Venant and another section of fifteen cars to Lillers to replace the cars withdrawn from these places, the former to clear the field ambulances of the Indian Division in the front line to St. Venant, and the latter to clear the field ambulances of the Indian Division west of the Merville–Hinges Road to Lillers, and also for entraining duties.

Evacuation from the casualty clearing stations depended on the running of the ambulance trains, the arrangements for which were made by the railway staff and the D.G.M.S. staff at G.H.Q. For this purpose Lieut.-Colonel Cummins, the D.A.D.M.S. at G.H.Q., was with advanced G.H.Q. at Hazebrouck and in constant touch with the office of the D.M.S. of the First Army in Aire, so that he was kept fully informed of the number of wounded waiting evacuation from each casualty clearing station. The number of ambulance trains then in France was twelve.

It was essential that secrecy should be maintained in order to avoid information regarding the attack leaking out through the medical services, and it was only on the eve of the battle that the D.M.S. of the army was able to inform the A.Ds.M.S. of divisions and the officers commanding medical units of his arrangements for the medical services. The A.Ds.M.S. of divisions, the officers commanding casualty clearing stations and the officers commanding motor ambulance convoys met at his office on the 8th March, when the general scheme of work was explained to them and special instructions dictated to each as outlined above.

The Medical Services during the Battle.

The Indian Corps.—The medical services of the Meerut Division were under the control of Colonel F. H. Treherne, who had previously been D.D.M.S. of the Indian Corps but had

reverted to the appointment of A.D.M.S. of the division when Corps D.Ds.M.S. were abolished at the beginning of the year. The chief feature in his arrangements was the manner in which the medical resources of both the Meerut and Lahore Divisions were more or less pooled during the battle. Colonel Treherne's previous knowledge of both divisions as D.D.M.S. of the corps was of material value in this respect. He continued to direct the collection of the sick and wounded to the main dressing stations until the 13th March, when he handed over the duties to Colonel Grayfoot, the A.D.M.S. of the Lahore Division.

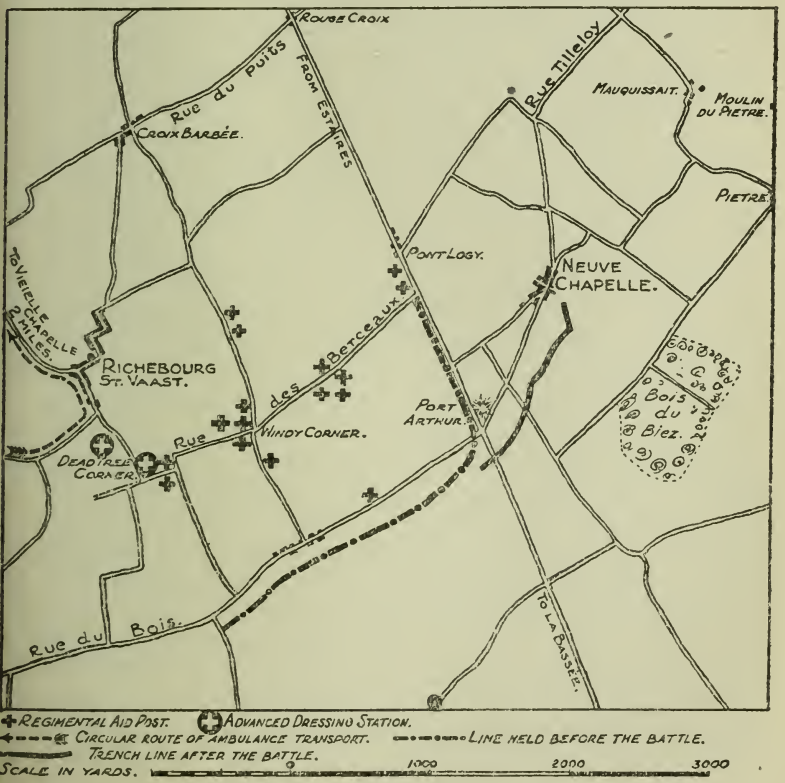
The position of the field ambulances of both divisions at the beginning of the battle are shown on the map of the medical situation. The same positions were occupied by one or other of the field ambulances of the Indian Corps throughout the battle. Colonel Treherne's orders were for a British field ambulance to open a main dressing station for wounded in schools in Vieille Chapelle and an Indian field ambulance to open in a large barn at Zelobes on the Estaires–Bethune Road. The field ambulances at Locon, L'Epinette, and Croix Marmeuse, were to be prepared to receive wounded should these two main dressing stations become congested, and the remaining field ambulances were kept open for the sick of the divisions. One advanced dressing station for British and one for Indians were to be opened in schools and houses of the Rue des Berceaux at the place known as Dead Tree Corner, on the road junction about half a mile south of Richebourg St. Vaast. The horsed ambulance wagons were to move in convoys of six by a circular route commencing for Indians at Zelobes, advancing to Richebourg St. Vaast by the road running south of Vieille Chapelle and Lacouture, and returning from the advanced dressing stations by the road north of these places back to Zelobes by way of Fosse. The same route was followed for British, except that it was shorter, as it commenced at Vieille Chapelle and returned to Vieille Chapelle.

All the available bearer divisions of the Lahore and Meerut Divisions were brought up to the advanced dressing stations at one time or another, collected the wounded to them from the regimental aid posts and searched the areas in advance where wounded were lying out. They were placed under the command of Captain O'Neill, I.M.S., of No. 128 Indian Field Ambulance. The regimental aid posts were all at a comparatively short distance from the advanced dressing stations, the majority being in the vicinity of the junction of the Richebourg L'Avoué–Croix Barbée road with the Rue des Berceaux known as Windy Corner.

When the battle commenced No. 128 Indian Field Ambulance was at Zelobes and No. 19 British at Vieille Chapelle with detachments at the advanced dressing stations. They were reinforced by personnel from No. 112 Indian and No. 8 British Field Ambulances of the Lahore Division, and these two latter units took over the main and advanced dressing stations when the A.D.M.S. of the Lahore Division relieved the A.D.M.S. of the Meerut Division on the 13th March. At first the bearer divisions of No. 19 British and No. 128 Indian Field Ambulances only were with Captain O'Neill, but they had to be reinforced by the bearer divisions of the remaining field ambulances of the Meerut Division, namely Nos. 20, 129 and 130, during the afternoon and evening of the 10th March. The bearers worked continuously during the night of the 10th/11th March,

INDIAN CORPS (FORWARD AREA).

SHOWING POSITIONS OF REGIMENTAL AID POSTS AND ADVANCED DRESSING STATIONS DURING THE BATTLE OF NEUVE CHAPELLE.



and Colonel Treherne then applied for assistance from the Lahore Division in the morning. The bearer divisions of No. 8 British and No. 111 Indian Field Ambulances with six ambulance wagons each arrived between 1.30 and 2 p.m. and relieved the bearers of No. 19 British and No. 130 Indian Field Ambulances. They were followed in the evening by bearers and ambulance wagons from No. 7 and No. 113 Field Ambulances, also of the Lahore Division. Altogether nine bearer divisions were employed at one time or other. They were worked, with slight modifications, in combined groups of three, for eight hours at a time, relieving one another in turn. At one time in the early morning of the 12th March there were at Dead Tree Corner 1 officer, 30 bearers and 2 ambulance wagons of No. 7 British ; 2 officers, 70 bearers and 5 wagons of No. 8 British ; 2 officers, 90 bearers and 6 wagons of No. 111 Indian ; 1 officer, 80 bearers and 6 wagons of No. 113 Indian ; and 2 officers, 75 bearers and 6 wagons of No. 128 Indian Field Ambulance ; or 8 officers, 345 bearers and 25 ambulance wagons, with the bearers and ambulance transport of the five remaining field ambulances of the Indian Corps resting and available as reliefs. The bearers of both the British and Indian field ambulances were Indians. Their work by night and day was carried out along the roads and areas constantly under shell-fire, but they displayed a coolness and courage which were the admiration of everyone. Masses of wounded were collected by them from the vicinity of the angle formed by the Neuve Chapelle and Estaires–La Bassée road, where the enemy had a strong post known as Port Arthur, and they worked up to within a short distance of the enemy trenches.

The orders for the horsed ambulance wagons to move in convoy along the circular route did not prove a very satisfactory arrangement. It was difficult for faster moving traffic to pass them on the narrow roads, and the traffic was considerably interfered with by their being in convoy instead of moving singly. The horses also soon became exhausted, and this added to the slowness of the movement. At first the ambulance wagons did not go beyond Richebourg St. Vaast, and the ten motor ambulance cars of No. 7 M.A.C., which the D.M.S. of the army had attached to the Meerut Division, were not used until later in the day ; but it soon became necessary to bring both wagons and cars up to the advanced dressing stations, and on one occasion to the regimental aid post at Windy Corner.

A considerable number of wounded of the Indian divisions on the left of the Indian Corps straggled up the Estaires road

to Pont Logy and beyond, or had been collected by bearers of the IVth Corps divisions. When Colonel Grayfoot took over the direction of the medical services in the battle zone, he was anxious to place an advanced dressing station or divisional collecting post for walking wounded on the Estaires road between Pont Logy and Rouge Croix, in order to intercept these stragglers and divert them by the Rouge Croix-La-couture road into the prescribed line of evacuation for the Indian Corps ; but this was not sanctioned by the IVth Corps staff. Consequently a considerable number of British and Indian wounded of the Meerut and Lahore Divisions were taken over by and evacuated to the field ambulances of the 7th and 8th Divisions in Estaires and from there to casualty clearing stations in Merville. So far as the British wounded were concerned this did not much matter, but it meant bringing the Indians to units which were not equipped for their special needs and which had no personnel with a knowledge of their language. Two British officers and 195 other ranks, and 130 Indians of the Indian Corps wounded drifted into 7th and 8th Division field ambulances in this way.

The main dressing station for British wounded of the Indian Corps at Vieille Chapelle was cleared by No. 2 M.A.C. to casualty clearing stations at Merville, and the main dressing station for Indians at Zelobes by the section of No. 8 M.A.C. at St. Venant to the Lucknow C.C.S. there. But the casualty clearing stations at Merville were also receiving the wounded of the IVth Corps, and were overworked by the evening of the 12th March. In order to relieve them, the D.M.S. of the army then issued orders for the British wounded of the Indian divisions to be cleared by No. 7 M.A.C. to the casualty clearing stations at Chocques and Lillers, and to the officers' hospital at Bethune.

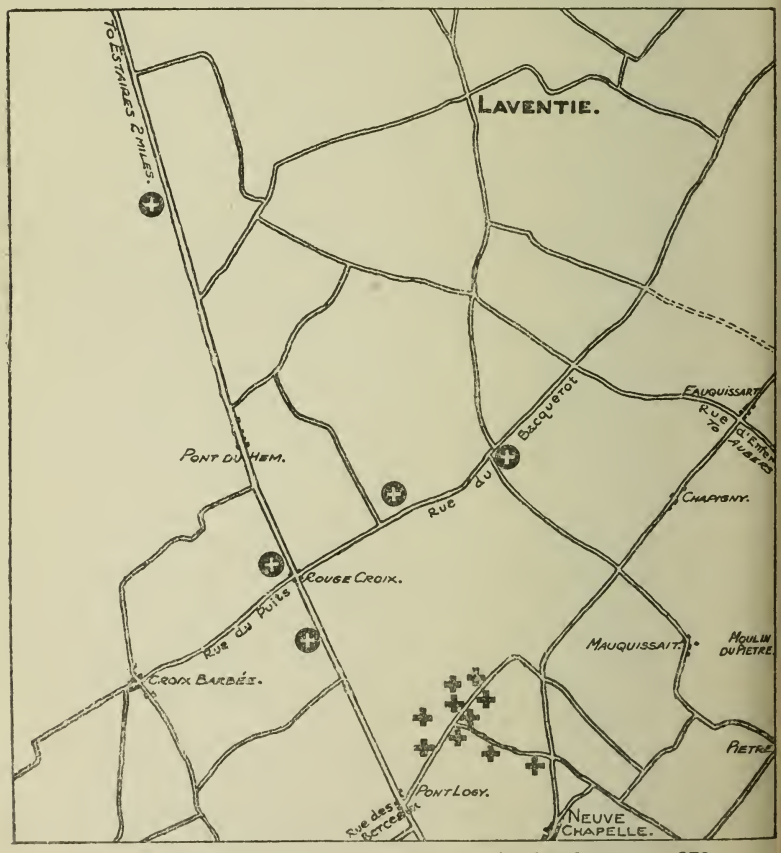
The Lucknow C.C.S. at St. Venant also became congested with serious cases of wounds, amongst the Indians chiefly, because the ambulance trains on their way back from Merville were already full before reaching St. Venant. This was remedied by transferring the more seriously wounded Indians to the Lahore C.C.S. at Busnes and Lillers and evacuating them by ambulance trains running on the Lillers–Chocques line of evacuation.

The IVth Corps.—The attack by the 8th Division on the 10th March was to be made by the 23rd Brigade on the left and the 25th on the right, the dividing line between the two brigades being the road running south-east from Rue Tilleloy

three-quarters or a mile east of Pont Logy. The 21st Brigade of the 7th Division was to occupy the trenches vacated by the 23rd Brigade, and the 24th Brigade those vacated by the 25th Brigade. The field ambulances of the 8th Division had their headquarters and main dressing stations in commodious buildings; No. 24 and No. 25 in schools in Estaires, and No. 26 in a large house and church in La Gorgue on the south side of the canal and not far from the railway station. Previous to the battle there was one advanced dressing station in charge of an officer and ten men of No. 26 Field Ambulance on the Estaires–La Bassée road, about one and three-quarters of a mile south-east of Estaires. On the 9th March Colonel Meek,

8TH DIVISION (FORWARD AREA).

SHOWING POSITIONS OF REGIMENTAL AID POSTS AND ADVANCED DRESSING STATIONS DURING THE BATTLE OF NEUVE CHAPELLE.



Note.—Conventional signs and scale are as in sketch map, p. 373.

the A.D.M.S. of the division, issued R.A.M.C. orders for the battle. Each field ambulance was to detail one officer and four stretcher bearers to reinforce three of the regimental aid posts in the reserve lines by 9 p.m. and one section of each field ambulance was to be held in reserve ready to march at one hour's notice. The bearer division of No. 25 Field Ambulance, less the sub-division of the section in reserve, was to collect wounded from the area of the 25th Brigade, and No. 24 Field Ambulance bearer division, less the sub-division in reserve, from the area of the 23rd Brigade. Both were to collect the wounded to Rouge Croix on the Estaires–La Bassée road. The bearer division of No. 26 Field Ambulance was to be in reserve. Ambulance transport was to assemble at the advanced dressing station.

When the attack commenced only one bearer sub-division of No. 24 and No. 25 Field Ambulances were waiting at the advanced dressing station. They moved forward at 9 a.m. By noon, however, the number of wounded was great and the bearer division of No. 26 Field Ambulance was then sent forward and later in the day the remaining bearer sub-divisions of No. 24 and No. 25. The La Bassée road was under heavy shell-fire from Pont Logy to Rouge Croix and the ambulance transport could not be sent down the road from Rouge Croix until after 5.30 p.m. The bearers had consequently to carry the wounded to Rouge Croix until then, and in order to lessen the carry the advanced dressing station was moved up to a point 400 yards south of Rouge Croix on the Estaires–La Bassée road. The original position of the advanced dressing station was, however, retained as a divisional collecting station for walking wounded, under one N.C.O. and four men, who supplied food and hot drinks to the wounded before they were sent on to Estaires.

On the 11th March the orders were for the 24th Brigade to advance on La Cliqueterie Farm, while the 21st Brigade of the 7th Division advanced on Aubers and Le Plouich, and the 23rd Brigade went forward to relieve the 25th Brigade and hold its line. The 25th Brigade was to assemble in rear of the 24th Brigade and support its attack. Colonel Meek's orders were then for the bearer division of No. 26 Field Ambulance to collect the wounded during the advance, while the bearers of No. 24 and No. 25 continued to search for and collect the casualties of the fighting of the previous day.

On the 12th March the 24th and 25th Brigades, with the 23rd in reserve, were to push on to La Cliqueterie Farm, the 25th Brigade on the right and the 24th on the left, the line of

attack being from the road junction immediately north of the north-east corner of the Bois du Biez to the bend of the road south-south-west of Mauquissait. The bearer divisions of No. 25 and No. 24 Field Ambulances were ordered to collect the wounded from these brigades and the bearer division of No. 26 to be in reserve with the 23rd Brigade. The number of wounded who had yet to be collected was great, and, owing to the exhaustion of the stretcher bearers, the D.A.G. of the division obtained the assistance of an officer and ninety-eight drivers of the R.F.A. ammunition column, and a party of French civilians was also sent to help the stretcher bearers. The D.M.S. was asked to send more blankets and stretchers and two medical officers. These were promptly sent and by the evening the number of stretchers was abundant.

On the 13th March the 8th Division was still in need of reinforcements to assist its stretcher bearers, and in response to an appeal from the IVth Corps to Army Headquarters and G.H.Q., an officer and seventy-five men of the 6th Battalion of the Cheshire Regiment arrived from St. Omer, together with two officers and fifty men of the North Midland C.C.S. from the Second Army. They searched the battlefield and collected wounded during the night of the 13th/14th March. The number of wounded collected during the forty-eight hours from 9 p.m. of the 12th to 9 p.m. on the 14th March was, however, small in comparison with the previous days, 29 officers, 563 other ranks and 45 Germans for the twenty-four hours to 9 p.m. of the 13th, 19 officers, 320 other ranks and 13 Germans to 9 p.m. on the 14th March, as compared with close on 2,500 during the previous 48 hours. By the night of the 14th/15th March all wounded had been brought in and conditions were then normal.

The battle of Neuve Chapelle was the first major operation experienced by the medical units of the 8th Division. The field ambulances were the three first line Territorial Force field ambulances of the Wessex division, and were commanded by Lieut.-Colonels Pickard, Soltau and Milne-Thompson respectively. All ranks were subjected to an exceptional strain, and, although it was unusual to apply for assistance in collecting the wounded from outside the division and was not made in subsequent battles, it was justified in view of the additional strain which would have been put on the somewhat inexperienced units should the attack have been continued after the 13th March.

The total number of wounded collected by the 8th Division between the 10th and 14th March was 161 officers and 4,225

other ranks. The casualties amongst the R.A.M.C. and regimental stretcher bearers were heavy. Of the R.A.M.C. two officers were wounded, Captain Byatt, attached to the 2nd Rifle Brigade, mortally, and Lieutenant Caddon, attached to the 2nd Lincolnshire Regiment, dangerously. No. 24 Field Ambulance lost one man killed, and nine wounded, one of whom died; No. 25 Field Ambulance two wounded, and No. 26 four.

In order to relieve the congestion of the main dressing stations in Estaires, and in the casualty clearing stations at Merville, the D.M.S. arranged for ambulance trains to be sent to La Gorgue station to clear the wounded to the base direct instead of through the casualty clearing stations. The A.D.M.S. of the 8th Division was made responsible for directing the loading and despatch of these trains. He appointed the officer commanding No. 8 Sanitary Section of the division to act as entraining officer with the men of the section to assist in loading. No. 6 Ambulance Train came to La Gorgue on the 11th March and left with a full load at 2 a.m. on the 12th. It brought with it 100 additional stretchers, which were sent to Pont Logy. No. 10 Ambulance Train came up on the forenoon of the 12th and left in the afternoon. It was followed by an improvised train which arrived at 5.45 p.m. but had no medical personnel or equipment. It was loaded with sitting cases. A medical officer with a R.A.M.C. orderly, medical comforts and stores, was detailed to take medical charge, and a message was despatched to Merville, Hazebrouck, and St. Omer for further assistance when the train passed through these places. On the 13th March No. 3 Ambulance Train arrived in the early morning and No. 4 in the afternoon. No. 3 came up again to La Gorgue during the forenoon of the 15th March.

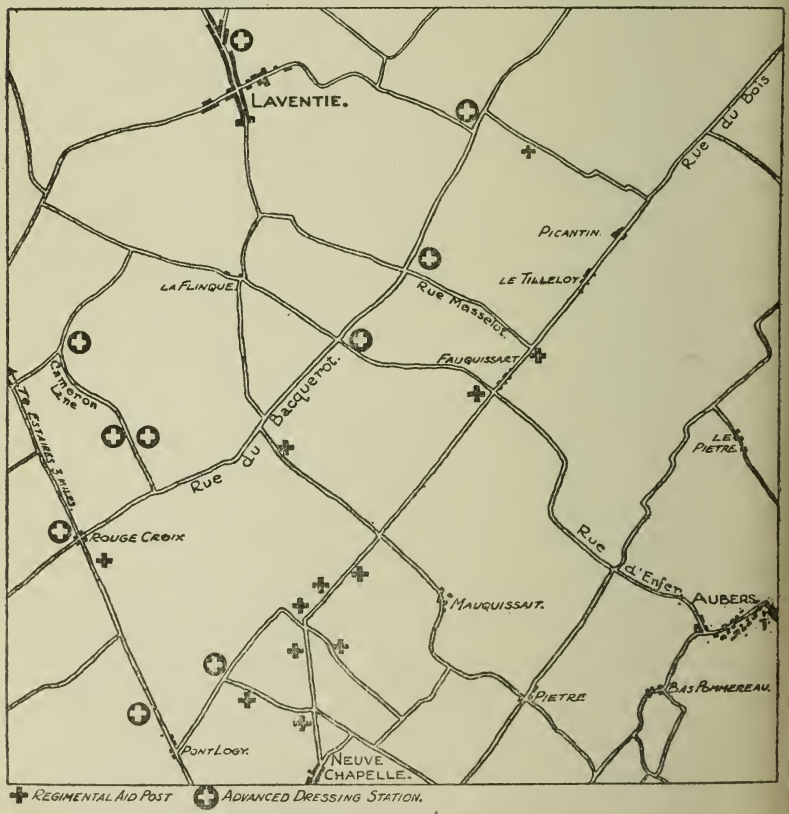
The 7th Division on the 10th March was not engaged until the afternoon. Its 21st Brigade, with the 20th Brigade in support, had moved up from Cameron Lane, where it was assembled, to the trenches in front of Neuve Chapelle, from which the 23rd Brigade of the 8th Division had commenced the attack. The 22nd Brigade was holding the line of trenches from Picantin to the cross-roads south-west of Chapigny. The A.D.M.S. of the division, Colonel Swan, had two of his field ambulances, No. 21 and No. 22, in the horticultural college at Estaires, and No. 23 in billets and in charge of convalescents at Neuf Berquin. Their bearer divisions, as had been the custom throughout in the 7th Division, were attached to brigades and under the orders of the brigade commanders; No. 21 with the

21st, No. 22 with the 22nd, and No. 23 with the 20th Brigade. No. 21 Field Ambulance had established an advanced dressing station in the Patronage du Sacre Coeur at Laventie. This was the only advanced dressing station in the 7th Division when the battle commenced, and was staffed by one medical officer, a cook, a N.C.O. and two nursing orderlies. The bearer division was billeted and the ambulance transport parked with it.

In the afternoon of the 10th March the 21st Brigade attacked in the direction of Pietre with Aubers as its objective and the 20th Brigade, which had assembled at Pt. Croix, near the railway crossing on the Estaires–La Bassée road, moved up to the trenches vacated by it. The attack stopped short of

7TH DIVISION (FORWARD AREA).

SHOWING POSITIONS OF REGIMENTAL AID POSTS AND ADVANCED DRESSING STATIONS DURING THE BATTLE OF NEUVE CHAPELLE.



Note.—Scale as in sketch map, p. 373.

Pietre by night time. The casualties collected at that time were comparatively few and were taken direct to the main dressing stations at Estaires by the Estaires–La Bassée road, instead of through the advanced dressing station at Laventie. "B" Sub-division of No. 21 Field Ambulance, however, had been sent forward from Laventie to form a second advanced dressing station in a farm near Cameron Lane, after the 21st Brigade had moved forward; but the wounded were only collected with difficulty over the shell-swept area to the south, and this advanced dressing station was little used. One man of the bearer division had been killed and four wounded in following the 21st Brigade through this shell-swept zone. On the 11th March both the 21st and 20th Brigades continued the attack without making any advance. Three of the medical officers attached to battalions were wounded, Lieutenant Priestley with the 2nd Gordon Highlanders, Lieutenant Ingram with the 2nd Royal Scots, and Lieutenant Ormsby with the 2nd Border Regiment. Two men of the R.A.M.C. were also wounded. On the morning of the 11th March the bearer divisions of Nos. 23 and 21 Field Ambulances had advanced dressing stations in Cameron Lane, but both sent bearers forward to open advanced dressing stations on the Rue Tilleloy, as the roads back to Cameron Lane and Laventie were being heavily shelled, and it was impossible to bring the wounded back in that direction. A bearer sub-division of No. 21 went to a dismantled house in the Rue Tilleloy, about 500 yards north-east of Pont Logy, and the bearer division of No. 23 to a farm near the Estaires–La Bassée road about a quarter of a mile north-west of Pont Logy. The motor ambulance cars and horsed ambulance wagons were consequently brought up to Pont Logy and evacuated the wounded by the Estaires–La Bassée road. The wounded collected by the 7th Division bearers during the day were few, 12 officers, 186 other ranks and 4 Germans up to 9 p.m., but a large number of wounded of the 7th Division had been collected and evacuated through Pont Logy by the ambulance transport of the 8th Division. During the night of the 11th/12th March, however, the 7th Division bearers collected between 300 and 400 more, and had cleared the ground by 5 a.m.

On the 12th March the second advanced dressing station of No. 21 Field Ambulance at Cameron Lane was struck by a shell, and four of the R.A.M.C. in it wounded. It was withdrawn to Laventie, and the work of clearing the wounded was then carried on entirely through Pont Logy, where the ambulance

transport of both the 7th and 8th Divisions reinforced by ten motor ambulance cars from the 2nd Cavalry Division evacuated them continuously during the night to Estaires. The advanced dressing station at Laventie had consequently little to do during the battle and acted more as a resting place for bearers and as a park for horsed ambulance wagons. It was always kept open, however, as it was on the direct route to Aubers and would have been used had that objective been gained.

In the early morning of the 12th March the advanced dressing station of No. 23 Field Ambulance, near Pont Logy, was hit several times during sustained artillery fire which had been directed against the area between Pont Logy and Rouge Croix, but fortunately all the wounded, who had accumulated there the evening before, had been evacuated during the night. The bearer division, however, was withdrawn to Rouge Croix and a dressing station was opened at the cross roads there.

Streams of wounded from all the divisions engaged, including Indians, were coming to Rouge Croix along the Rue du Bacquerot, the La Bassée road and the Rue du Puits, some on stretchers but the majority walking. Major Brown, who commanded No. 23 Field Ambulance bearer division, at once held up on his own initiative all the ambulance transport passing Rouge Croix on its way to Pont Logy and supply wagons returning empty. By thus exercising a general control of the traffic he was able to send back stretcher cases on ambulance cars, sitting cases on the horsed ambulance wagons and a number of walking cases on empty transport wagons, about 250 wounded being rapidly cleared in this way. Later in the day Major Brown returned to the orginal position of his advanced dressing station near Pont Logy and found many wounded collected, the bearers being too exhausted to carry them further. No ambulance transport, however, had reached Pont Logy, but, in response to a message sent to his A.D.M.S., a large number of ambulance cars arrived at 11 p.m. and cleared about 350 wounded during the night.

At 9.30. a.m. on the 13th March, when the 20th and 21st Brigades were to continue the advance towards Moulin du Pietre, all the advanced dressing stations of the 7th Division were cleared of wounded and little work was thrown on them until the evening. The advanced dressing station of No. 23 Field Ambulance had then practically the whole work of clearing the wounded of the 7th and 8th Divisions along the Estaires road in consequence of the advanced dressing station of No. 25 Field Ambulance of the latter division having been forced to

retire. During the night of the 13th/14th March about 330 wounded were cleared, and No. 23 Field Ambulance bearers continued to collect wounded under shell-fire to their dressing station during the 14th March. On the following day the A.D.M.S. was informed by the regimental medical officers that no wounded were lying out and the advanced dressing stations of the 7th Division were consequently closed, the bearers going into billets at Laventie.

The bearer division of No. 22 Field Ambulance was less actively engaged. The 22nd Brigade to which it was attached did not attack. Advanced dressing stations were, however, opened at three places along the Rue du Bacquerot by the three bearer sub-divisions. The area over which they worked was exposed to artillery and rifle fire, and the bearer sub-division on the right was engaged under constant shell-fire in collecting wounded from the left of the attack on Moulin du Pietre by the 21st Brigade.

The tent divisions of No. 21 and No. 22 Field Ambulances shared the horticultural college building in Estaires. The tent division of No. 23 assisted both until the 13th March, when it opened a main dressing station of its own in a separate building. On the morning of the 12th March one of its sub-divisions was sent to Merville, by order of the D.M.S., to assist No. 6 C.C.S., but returned at night. The sick and wounded of the 7th Division were evacuated during the battle by No. 2 M.A.C. to the casualty clearing stations at Merville, or direct to the ambulance trains coming up to La Gorgue, the evacuation to the latter being directed from all field ambulances in Estaires by the A.D.M.S. of the 8th Division, as already noted.

Medical Services with Other Formations.—In the attack by the 2nd Division on the 10th March a large number of wounded was admitted to its field ambulances. There were advanced dressing stations at Beuvry and at the cross-roads near Annequin, two miles south-east of that town, on the Bethune–La Bassée road. The A.D.M.S. of the division, Colonel Holt, ordered the bearer divisions of No. 5 and No. 6 Field Ambulances to be in readiness on the night before the attack along the road known as Harley Street, running north and south through Pont Fixe, the former to collect wounded from the area south of the canal, and the latter from the area north of the canal. A bearer sub-division of No. 4 Field Ambulance was with the Guards Brigade in reserve in the wood north of the canal, east of Gorre, the rest of the bearer division being in Bethune

in the event of wounded having to be loaded into ambulance trains there. The wounded were to be taken direct to the main dressing stations in Bethune, but if the numbers were large they were to be collected to the advanced dressing station in Beuvry and removed from there by the motor ambulance cars. Horsed ambulance wagons for sitting cases were kept in reserve near Annequin. Evacuation of the wounded from the trenches was very rapid, as motor ambulance cars were able to approach within 200 to 500 yards of the regimental aid posts. On the evening of the 11th March the bearer division of No. 4 Field Ambulance relieved that of No. 6, which went into billets in Bethune. It was only, however, during the first twenty-four hours of the battle that there was any considerable number of casualties in the 2nd Division, the total admitted to its field ambulances being 10 officers and 290 other ranks. In the subsequent twenty-four hours the number was only one officer and 45 other ranks; and on the 12th March 19 other ranks. The majority of the wounded were collected on the north of the canal, to an advanced dressing station formed by the bearer division of No. 6 Field Ambulance at the junction of the road from Givenchy to Le Plantin, known as Windy Corner. This bearer division had four wheeled stretcher carriers which were of great assistance to them. The bearer division of No. 5 Field Ambulance collected the wounded to the Château Cuinchy, near the junction of Harley Street with the Bethune–La Bassée road, from whence the motor ambulance cars and horsed ambulance wagons of the field ambulances took them to Bethune. The tent divisions of No. 4. and No. 5 Field Ambulances had main dressing stations at Bethune, the former in the French civil and military hospital, and the latter in the Ecole Jules Ferry, the seriously wounded being sent to No. 4 and the slightly wounded to No. 5. There was also an officers' hospital in charge of a detachment of No. 4 Field Ambulance in a house equipped by a French auxiliary hospital. No. 6 Field Ambulance both before and after the battle was employed in managing a divisional bathing and disinfecting establishment in the Seminary St. Vaast at Bethune. The baths were stopped during the battle and the accommodation prepared for 200 wounded on the 9th March, but they were resumed on the 12th March. The sick and wounded were cleared from Bethune by No. 7 M.A.C. to the casualty clearing stations in Chocques and Lillers.

The field ambulances of the 1st Division did not take part

in the battle. No. 1 Field Ambulance was running divisional baths and a laundry at Auchel, south of Lillers, No. 2 was at Mont Bernenchon, and No. 3 in two small schools in Bethune. Very few casualties were occurring in the division, but it had been arranged that should they become excessive the serious cases were to be taken to No. 4 Field Ambulance in Bethune.

The 1st Canadian Division field ambulances took over the buildings previously occupied by those of the 7th Division in Sailly-sur-la-Lys and Bac St. Maur, No. 1 and No. 3 being in the former, and No. 2 in the latter locality. On the 11th March No. 1 and No. 2 were sent forward to Fleurbaix, but returned on the 15th March. Although Fleurbaix was frequently and heavily shelled, especially on the 14th March, the casualties in the Canadian Division front were few during the battle.

During the battle of Neuve Chapelle active fighting was also proceeding in the Second Army. On the 12th March the 7th Brigade of the 3rd Division attacked the enemy at Spanbroeck, and on the 14th the enemy attacked the 27th Division at St. Eloi. Trenches were captured but regained, and the fighting continued during the night of the 14th/15th March. The attack on the 12th March took place about 4 o'clock in the evening without result. No. 7 and No. 8 Field Ambulances were detailed for the operations. The former had a main dressing station in the Convent at Locre and opened an advanced dressing station at Kemmel, the latter, which was at Bailleul, opened an advanced dressing station at La Clytte. No. 3 M.A.C. was detailed to clear the dressing stations, ten cars being assembled at Locre and five at La Clytte. Seven officers and 131 wounded were collected to the dressing station of No. 7, and one officer and 58 to La Clytte. They were brought to the advanced dressing stations, from the regimental aid posts to which the bearers collected them, by horsed ambulance wagons, and from there to the main dressing stations and casualty clearing stations in Bailleul by the cars of No. 3 M.A.C.

The enemy attack on St. Eloi was a surprise attack. On the D.M.S. of the Second Army being informed of it, he caused No. 2 and No. 8 C.C.Ss. at Bailleul to be cleared for the reception of casualties. The A.D.M.S. of the 27th Division, Colonel P. C. H. Gordon, detailed No. 83 Field Ambulance with the bearer division of No. 81 and two officers of No. 82 with reserves of dressings to form a dressing station at Dickebusch. The road

from Voormezeele to Dickebusch from the left sector of the attack, where most of the casualties occurred, was narrow and in bad repair, and the ambulance transport, owing to the congestion of traffic, was unable to go far forward The bearers had consequently to carry wounded longer distances by hand. A collecting post was established at Kruisstraat Hoek. The wounded were cleared to Bailleul by No. 3 M.A.C. Nineteen officers were wounded and brought to No. 2 C.C.S., the other ranks wounded were taken to No. 8 C.C.S., to which over 400 were admitted on the 14th and 15th and up to the morning of the 17th March.

Weather.

The weather from the 10th to the 15th March was fortunately dry, mild, and frequently clear and sunny. It was consequently easy to avoid congestion in those dressing stations, which could not depend on much accommodation in buildings, by keeping the wounded in the open-air until they were evacuated. This was specially so in the dressing stations of the Indian Divisions at Vieille Chapelle and Zelobes.

Casualty Clearing Stations.

The work of the casualty clearing stations was mainly concentrated in Merville and St. Venant. No. 6 C.C.S. in Merville had to be expanded on the 12th March by taking over the Salle des Fêtes, a large disused building, suitable at the time for accommodating the lighter cases.

Between the 10th and 13th March the personnel of the casualty clearing stations in Merville was very largely increased. The tent sub-division of No. 23 Field Ambulance, as noted already, and a detachment of two officers and twelve other ranks from the Canadian C.C.S. at Fort Gassion were sent to No. 6 C.C.S. Two N.C.O's. and eight men from No. 1 at Chocques and No. 4 C.C.S. at Lillers were also sent to assist the clearing stations at Merville by the D.M.S. of the First Army, and the D.G.M.S. had also sent to Merville reinforcements of 15 officers of the R.A.M.C., 6 nursing sisters and 25 N.C.O's. and men from the lines of communication and one officer and 75 men of the 6th Battalion Cheshire Regiment of the North Midland Division. With the exception of three of the R.A.M.C. officers, who were sent to replace casualties in the 7th Division, two to replace casualties in the 8th Division, and two officers and 25 men of the Cheshire Regiment

who were sent to assist No. 7 C.C.S., the whole of these reinforcements were employed in No. 6 C.C.S. Sixteen men of the French Territorial Regiment No. 77, also assisted in the work of No. 6 C.C.S.

Ambulance Trains.

In addition to the ambulance trains, three improvised ambulance trains, each capable of taking about 1,000 cases sitting up, were sent to clear the lightly wounded from La Gorgue, Merville, and St. Venant, and a French ambulance train, capable of taking 267 lying-down cases, was also sent up to Merville. The latter consisted of a number of covered goods vans each in charge of an orderly, and fitted with a stove for heating and a table for dressing and medical comforts. The vans were arranged to carry stretchers on the Port system. An interpreter from No. 2 M.A.C. was placed on this train.

The improvised trains were supplied with rations and medical and surgical equipment at Merville, but there was some difficulty and confusion in supplying them with personnel. When G.H.Q. notified the D.M.S. of the First Army that an improvised train was being sent up, it was understood that it would arrive with suitable equipment and personnel, and it was only at the last moment that it was found necessary to provide these from army sources. This was eventually rectified. The D.G.M.S. was asked to add personnel at intermediate stations, and he eventually arranged for the trains to arrive suitably staffed.

Motor Ambulance Convoys.

The section of No. 8 M.A.C. at Fort Gassion was moved on the 12th March to Merville to assist No. 2 M.A.C., and No. 1 M.A.C. from G.H.Q. evacuated many of the less serious cases from Merville and Aire to St. Omer. Cars from No. 5 M.A.C. were also sent from Hazebrouck to assist in relieving congestion at Merville by transferring patients to clearing stations in the Second Army. Wounded and sick were also evacuated from Merville by road to the Canadian C.C.S. at Aire.

Although strict instructions had been given to the officers commanding both No. 6 and No. 7 C.C.Ss. at Merville for regulating the evacuation from their units to the ambulance trains, there was a tendency on the part of the officer commanding No. 6 C.C.S. to disregard the arrangements that were made,

with the result that while No. 6 managed to keep fairly clear, it did so at the expense of No. 7. When it was ascertained that this difficulty was occurring, Captain Gale, the medical officer of the IVth Corps headquarters staff, was appointed to regulate the evacuation, and one of the officers from the mobile laboratory at Lillers was sent to Merville to assist him. On the 13th March Colonel Guise Moores, who was in charge of No. 7 General Hospital at Malassise, was instructed by the D.G.M.S. to proceed to Merville and assist the D.M.S. of the army in controlling evacuation. He arrived, however, after the main pressure had ceased and returned to Malassise on the evening of the 15th March.

By the 15th March all the personnel who had been sent to assist in the work of the First Army returned to their units with the exception of two nursing sisters, who were retained in the officers' wards at Bethune for permanent duty, and two who were retained in No. 6 C.C.S. to assist in the nursing of wounded who were still unfit to be moved.

The motor ambulance convoys after the battle resumed the position occupied by them on the 10th March.

The Salle des Fêtes at Merville and the adjoining schools were retained for medical units. They were taken over by the London Divisional C.C.S. (No 54) from No. 6 C.C.S. at the end of March, so that there were three casualty clearing stations subsequently at Merville.

Casualties.

The number of wounded received into the field medical units during the battle, and the number of sick and wounded evacuated from the casualty clearing stations or direct from the field ambulances in La Gorgue and Estaires, by ambulance and improvised ambulance trains between the 10th and 15th March are shown in the following tables.

Approximately the number of wounded collected from First Army units between the 10th and 15th March was 355 British officers, 7,708 British other ranks, 1,193 Indians, and 386 Germans, or a total of 9,642. Of these approximately 1,080 were evacuated from casualty clearing stations to St. Omer by road, 6,800 from casualty clearing stations, and 834 direct from field ambulances by railway, or a total of 8,714. In addition a number of sick were evacuated. The total sick and wounded carried by the trains are shown in the last of the tables.

Table showing the number of wounded admitted by days into Field Ambulances of Divisions, First Army, from the morning of 10th March to 9 p.m. 15th March, 1915.

Division.	10th				11th				12th				13th				14th				15th				Total
	British		German		British		German		British		German		British		German		British		German		British		German		
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	
1st Division	2	26	—	—	—	32	—	—	—	30	—	—	—	17	—	—	—	10	—	—	—	16	—	—	133
2nd Division	6	250	—	—	5	92	—	—	—	22	—	—	2	16	—	—	—	15	—	—	3	17	—	—	428
7th Division	3	53	—	1	12	186	—	4	35	554	—	14	25	635	—	11	10	307	—	2	3	119	—	9	1,983
8th Division	44	991	4	63	60	1,068	3	71	27	1,240	1	50	33	638	1	63	13	283	—	13	13	113	—	9	4,801
Lahore Division—British ..	1	—			—	—			—	—			1	68			1	61			2	28			
Indians ..	—		—	—	—		—	—	—		—	—	136		—	1	7		—	5	27		—	2	340
Meerut Division—British.. ..	24	342			8	89			17	217			4	102			—	—			—	—			
Indians ..	320		—	22	166		2	15	280		2	18	256		—	—	1		—	—	—		—	—	1,885
Canadian Division	—	12	—	—	—	—	—	—	1	25	—	—	—	15	—	—	—	16	—	—	—	3	—	—	72
Totals—British	80	1,674			85	1,467			80	2,088			65	1,491			24	692			21	296			
Indians	320		4	86	166		5	90	280		3	82	392		1	75	8		—	20	27		—	20	9,642

GRAND TOTALS:—British Officers .. 355
British—Other ranks .. 7,708
Indians 1,193
German Officers 13
German—Other ranks .. 373

9,642

Number of Wounded Evacuated from Casualty Clearing Stations, 10th to 15th March, 1915.

Casualty Clearing Station.	10th			11th			12th			13th			14th			15th			Total
	British		Germans	British		Germans	British		Germans	British		Germans	British		Germans	British		Germans	
	Off.	O.R.		Off.	O.R.		Off.	O.R.		Off.	O.R.		Off.	O.R.		Off.	O.R.		
No. 1—Chocques	—	26	—	—	195	—	—	5	—	—	123	22	—	43	—	—	77	1	492
No. 4—Lillers	1	2	—	11	185	—	—	2	—	—	53	1	2	—	—	2	6	—	265
No. 6—Merville	28	492	—	58	565	9	46	503	4	49	814	2	24	568	103	—	133	62	3,460
No. 7—Merville—British	—	288	—	—	455	10	—	597	—	—	243	31	—	411	13	—	20	17	2,118
Indians	—			7			—			8			13			5			
Lahore, Lillers—Indians	—		—	127		—	5		—	114		—	145		—	95		—	535
Lucknow, St. Venant—Indians	—		—	161		—	21		—	133		—	315		—	—		—	630
No. 1 Canadian—Aire	—	—	—	—	—	—	—	43	—	—	79	—	—	—	—	—	260	—	382
Totals—British	29	808	—	69	1,400	19	46	1,150	4	49	1,312	56	26	1,022	116	2	496	80	7,882
Indians	—			295			75			255			473			100			

GRAND TOTALS:—

British Officers	221
British—Other ranks	6,188
Indians	1,198
Germans	275
	7,882

Battle of Neuve Chapelle.

Evacuation of Sick and Wounded by Ambulance Trains, 10th to 15th March 1915.

Date.	A.T. number.	Train loaded at	Train unloaded at	Numbers carried.			
				Br.	Ind.	Ger.	Total
10th ..	1	Chocques and Lillers ..	Boulogne and Versailles ..	190	65	—	255
	4	Merville	Boulogne and Rouen ..	296	—	—	296
	10	Lillers and St. Venant ..	Boulogne	223	—	—	223
			Totals	709	65	—	774
11th ..	2	Merville	Boulogne	218	—	11	229
	2	Merville	Boulogne	206	—	3	209
	3	Merville	Boulogne and Etaples ..	157	—	36	193
	7	Chocques and Lillers ..	Boulogne	286	—	—	286
	9	Merville	Boulogne	296	3	2	301
	10	Chocques and Lillers ..	Boulogne	376	—	—	376
			Totals	1539	3	52	1594
12th ..	1	Merville	Rouen	372	—	—	372
	6	La Gorgue	Boulogne	229	—	10	239
	8	Chocques	Boulogne	248	—	—	248
	10	La Gorgue and St. Venant	Boulogne	186	—	—	186
	11	Merville	Boulogne and Rouen ..	217	4	—	221
	12	Merville	Boulogne and Etaples ..	268	—	10	278
			Totals	1520	4	20	1544
13th ..	3	La Gorgue	Boulogne	202	4	—	206
	4	La Gorgue	Boulogne and Versailles ..	230	20	—	250
	5	Chocques and Lillers ..	Boulogne	201	28	—	229
	6	Chocques and Lillers ..	Boulogne	140	43	7	190
	8	Merville	Boulogne	212	—	—	212
	9	Merville	Boulogne	256	17	3	276
			Totals	1241	112	10	1363
14th ..	1	St. Venant	Boulogne	430	—	—	430
	2	Merville	Boulogne	283	—	1	284
	3	Chocques and Lillers ..	Boulogne	70	137	1	208
	6	Lillers	Boulogne	2	149	—	151
	7	Merville	Boulogne	285	—	—	285
	8	Merville	Boulogne	202	—	—	202
			Totals	1272	286	2	1560
15th ..	2	Merville	Boulogne	248	—	40	288
	3	Merville and La Gorgue ..	Boulogne and Rouen ..	186	—	15	201
	8	Chocques	Boulogne	250	—	—	250
	11	Merville	Le Havre	145	—	69	214
			Totals	829	—	124	953

In addition, two improvised trains and one French Ambulance Train evacuated—

On the 11th from Merville	651
On the 12th from La Gorgue	477
On the 13th from Merville	663
On the 14th from Merville (French Amb. Train)	294
Total	2085

Total evacuated by regular ambulance trains :—

British	7110
Indians	405
Germans	273
Total	7788
Grand Total evacuated by train	9873

Of this number some 3,000 cases were stretcher cases, the remainder sitting cases

The percentage of deaths between the 10th and 17th March, amongst the wounded admitted to field ambulances, was 3·6 for British officers, 2·5 for British other ranks, 1·7 for Indians, and 1·3 for wounded enemy prisoners of war. The corresponding percentage of deaths amongst the wounded received into casualty clearing stations was 1·7 for British officers, 2·2 for British other ranks, 2·6 for Indians, and 3·3 for German wounded. The total number that died in the field ambulances before evacuation was 228, and in casualty clearing stations 197, between the 10th and 17th March.

Lessons of the Battle.

The chief difficulty in collecting and clearing wounded from the battlefield was caused by the great congestion of traffic along the Estaires–La Bassée road, and the constant shelling to which it was subjected as far as Rouge Croix. This did not affect the Indian divisions so much, but the La Bassée road was the one channel to which the bearers brought the wounded of the 7th and 8th Divisions. Where there was no congestion of the roads, wounded were brought rapidly to the main dressing stations. In the operations of the 2nd Division, in front of La Bassée for example, the ambulance cars took less than half an hour to reach Bethune from the advanced dressing stations on the road through Pont Fixe, a distance of six to six and a half miles. As the advanced dressing stations were close to the communication trenches a wounded man thus reached the main dressing station frequently within an hour of the receipt of his wound. The A.D.M.S. of the Meerut Division specially remarked on the advantage of having one echelon of ambulance transport working between the advanced and main dressing stations and another, the motor ambulance convoy under army control, working between the latter and the casualty clearing stations. The system prevented the field ambulance transport being sent too far back, and enabled it to return rapidly to the advanced dressing station. On the whole the wounded during the battle were collected and evacuated rapidly and systematically, as may be gathered from the facts that of the 9,642 admitted to the field ambulances of the First Army between the 10th and 15th March, 7,882 had been sent to the base from the casualty clearing stations by the latter date, in addition to those evacuated direct by ambulance trains from field ambulances in Estaires, and that by the 17th March the number of wounded left in the casualty clearing stations was

only 2 officers, 131 British, 38 Indian other ranks, and 6 Germans. These were all cases more or less unfit to be moved.

The experience gained in the battle led to certain changes in administration and organization. Although the evacuation of the wounded to the base hospitals was rapid, and worked smoothly, the want of a D.D.M.S. at the headquarters of the corps in order to co-ordinate the work of the divisional medical services of corps and generally control the evacuation from the field ambulances to casualty clearing stations was much felt. Consequently D.Ds.M.S. were restored to the Corps in April.

Amongst other points which were taken up after the battle were the organization for automatically replenishing stretchers and blankets in field ambulances and advanced dressing stations; the improvement in the specification tally; inter-communication between brigade headquarters and bearer divisions; assistance to stretcher bearers when hand carriage of wounded was over long distances; equipment of motor ambulance cars; lighting of field ambulances; and better means of employing improvised trains, and utilizing the canals.

The return of stretchers to the bearer divisions was constantly delayed by slighter cases of wounded being kept on them while waiting the arrival of ambulance transport at the advanced dressing stations; and by casualty clearing stations omitting to put stretchers in ambulance wagons in place of those removed with the wounded. A system of constantly replacing stretchers was organized for subsequent battles.

The specification tally was more or less illegible on account of the material on which it had been made, and the introduction of a new tally of material similar to that used by the Canadian Division became imperative. The probability of this occurring was foreseen in 1914 by the medical department at the War Office, but too late to alter the mobilization equipment before war was declared, so that many of the old specification tallies were still in use.

Inter-communication with brigade headquarters was attempted by No. 25 Field Ambulance, two orderlies from which were attached to the headquarters of the 25th Brigade to keep the bearer division informed regarding the progress of the battle; but they failed entirely to get messages through. It was apparent that the method laid down in the Field Service Regulations and R.A.M.C. training, namely, for the bearer division of a field ambulance to reconnoitre the ground and get into direct touch with the regimental stretcher bearers

was the only correct method of obtaining information as to where wounded were lying. The need of telephone communication, however, between the advanced dressing station and the main dressing station would have been of much value.

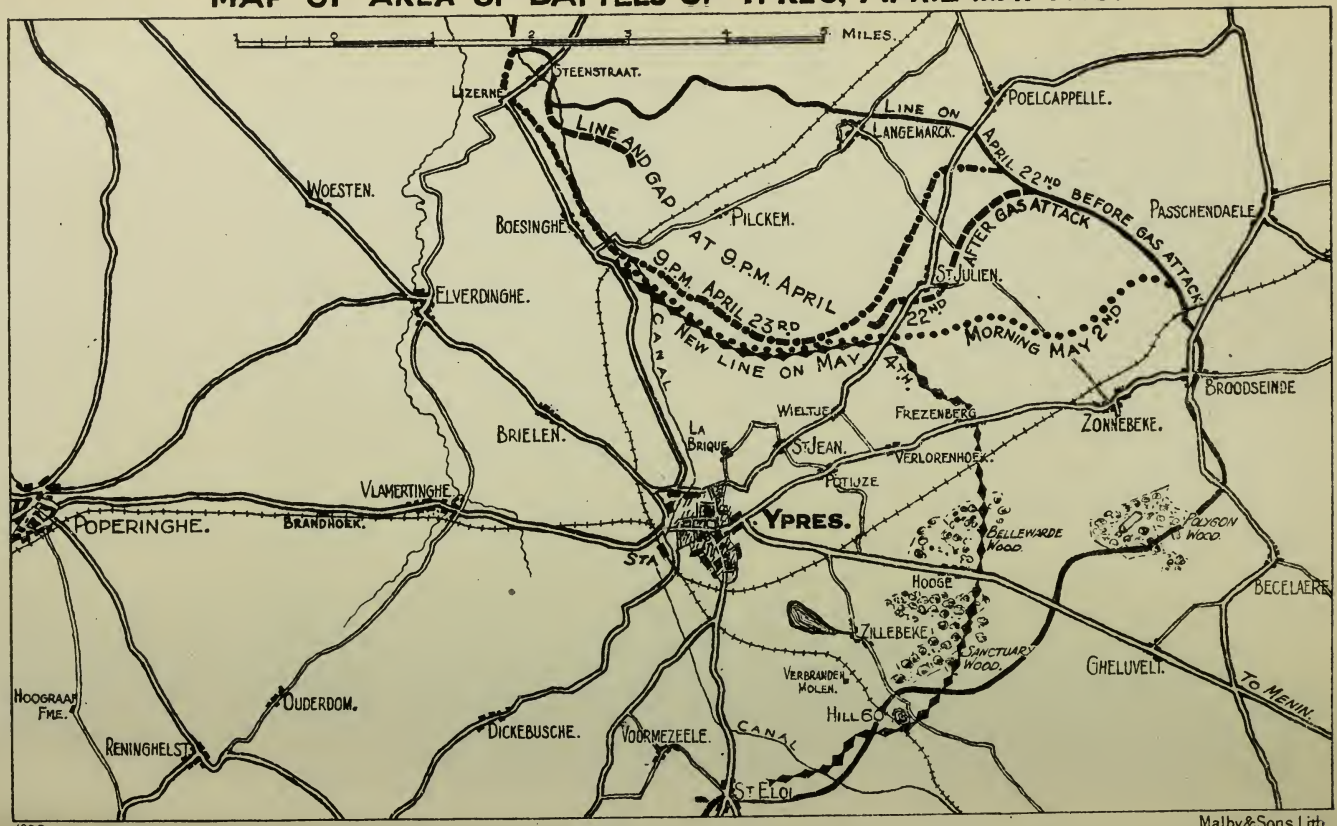
Stretcher bearers of the 2nd Division had their work much lightened by the use of wheeled stretcher carriers. The 8th Division had before the battle constructed a wooden trolly line for bringing supplies to the trenches, and it was intended to use it for bringing back wounded. It was not so used, however, but trolly lines, wheeled stretcher carriers, and special stretchers for the trenches, came more and more into use after the battle.

The equipment of ambulance cars with stretchers, blankets and hot water bottles was also developed after the battle, and also improvement in the means of lighting the field ambulances, which hitherto depended on a portable oil lamp.

Definite instructions were required regarding the use of improvised trains. All matters connected with railway transport were outside the responsibility of the Army D.M.S. and, as already noted, there arose some misunderstanding with regard to equipping and staffing them. The principle of sending personnel and material from army units during a battle to complete improvised trains sent up from the lines of communication to the Army would obviously lead to depletion of army resources at a time when they were required to be reinforced rather than depleted. The D.M.S. of the First Army was impressed by the excellent organization of the French improvised train which came up to Merville and arranged afterwards to maintain at Chocques, Lillers, and Merville, equipment and an organization for converting, in consultation with the railway transport authorities, three of the supply trains, returning empty, into ambulance trains in an emergency at each of these places. (See Appendix B.)

Considerable use might have been made of the canals in the First Army area as a means of easy transport of serious cases. This was so apparent that the construction of ambulance barges was taken in hand by G.H.Q. immediately afterwards.

MAP OF AREA OF BATTLES OF YPRES, APRIL-MAY 1915.



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CHAPTER XVIII.

THE BATTLES OF YPRES IN 1915.

DURING April and May 1915 the Ypres Salient was the scene of a succession of battles, which had a profound influence on the medical services and stirred them to unwonted efforts in a direction that had never previously been contemplated. It was their first experience of the use of gas as a weapon in warfare. At five o'clock in the afternoon of the 22nd April, clouds of what proved to be chlorine gas were emitted from the enemy's trenches down wind against the allied trenches in the vicinity of Poelcappelle, north-east of Ypres. From that time onwards, whenever the weather was favourable, gas attacks continued to be employed during the subsequent fighting. At this time the Salient was occupied by the Vth Corps, under Lieut.-General Plumer. Its line of trenches ran from the railway north of Hill 60 and south of Zillebeke across the Menin and Zonnebeke roads, east of Hooge and Zonnebeke, to the Poelcappelle road, in a semi-circle about seven miles distant from Ypres as its centre. It was composed of the 27th Division on the right as far as Polygoneveld, west of Becelaere, the 28th Division in the centre to a point across the railway about one and a half miles north-east of Zonnebeke and the same distance south-west of Passchendaele, and the 1st Canadian Division on the left of the 28th to the Poelcappelle road. The 5th Division, IInd Corps, was on the right of the Vth Corps, and had been engaged since the 17th April in attacks and counter-attacks on Hill 60. French, African and Territorial troops were on the left of the Vth Corps from the neighbourhood of Poelcappelle to the Yser Canal, in front of Lizerne, as far as Steenstraate. The Second Army, of which the Vth Corps thus formed the left wing, had its headquarters at Hazebrouck. South of the Ypres Salient it held the line of trenches on the left of the First Army from in front of Bois Grenier, the IIIrd Corps being on the right and the IInd Corps between it and the Vth Corps. A Territorial division was with each of the three corps, the South Midland with the IIIrd Corps, the North Midland with the IInd, and the Northumbrian with the Vth. The last had only joined the Vth Corps on the 21st April and was in a back area.

The Cavalry Corps, composed of the 1st, 2nd and 3rd Cavalry Divisions, was echeloned behind the junction of the First and Second Armies in the vicinity of Nieppe, Vieux Berquin and Hazebrouck, with its headquarters at La Motte.

Medical Situation before the Gas Attack.

The D.M.S. of the Second Army, Surg.-General R. Porter, had under his control as army troops seven casualty clearing stations, three motor ambulance convoys, three advanced depôts of medical stores and two mobile laboratories, distributed as follows :—

Casualty Clearing Stations.

Poperinghe	No. 3 and No. 5.
Bailleul	No. 2 and No. 8.
Hazebrouck	No. 10 and South Midland.
Monts des Cats ..	North Midland, acting as an Army Rest Station.

Motor Ambulance Convoys.

Bailleul	No. 3, clearing field ambulances of IInd and IIIrd Corps.
Poperinghe	No. 4, clearing Vth Corps.
Hazebrouck	No. 6, employed in general duties under the D.M.S., chiefly in transferring patients from Poperinghe, and clearing casualty clearing stations to railway stations.

Advanced Depôts of Medical Stores.

Bailleul	No. 2.
Poperinghe	The Canadian.
Hazebrouck	No. 11.

Mobile Laboratories.

Bailleul	No. 1 Hygiene.
Hazebrouck	No. 2 Bacteriological.

The D.D.M.S. of the Cavalry Corps, Colonel M. O'Keeffe, had a motor ambulance convoy, No. 5, under his control. The headquarters of the convoy were at Hazebrouck.

The field ambulances of the divisions, with the exception of those of the 5th and 6th, had by this time been provided with seven motor ambulance cars and three horsed-ambulance wagons in place of the War Establishment of ten horsed-ambulance wagons, together with a divisional field ambulance workshop for their repair. The cavalry field ambulances had four motor ambulance cars and six light ambulance wagons each.

As a general rule each division kept one of its field ambulances in its back area as a divisional rest station. The others formed advanced dressing stations as near the trenches as possible and main dressing stations further back. Wounded were

collected to the advanced dressing stations from regimental aid posts and taken back to the main dressing stations in the field ambulance transport. Thence they were taken to the casualty clearing stations by the motor ambulance convoys.

The disposition of the field ambulances in the divisions occupying the Ypres Salient previous to the 22nd April was as follows :—

The 27th Division, of which Colonel P. C. H. Gordon was A.D.M.S., had no definite advanced dressing stations. Regimental aid posts, however, were grouped in cellars at Hooge and in dug-outs in Glencorse Wood, north of the Menin road, about a mile south-east of Westhoek, and in Sanctuary Wood, south of Hooge. Two of its field ambulances, No. 81 and No. 82, were opened as main dressing stations in the civil hospital in Ypres. The ambulance transport went out along the Menin road at night and brought the wounded back to them from the grouped aid posts. No. 83 Field Ambulance was in the back area, at L'Ebbé farm, near Poperinghe.

The regimental aid posts of the 28th Division, which had taken over the trenches in front of Zonnebeke from the French in the beginning of April, were on the Zonnebeke–Broodseinde road and on the roads running south from Zonnebeke to the Polygone. The A.D.M.S., Colonel N. C. Ferguson, had arranged for a divisional collecting post, to which the field ambulance bearers brought the wounded by hand or on wheeled stretchers, at a cottage about half a mile west of Zonnebeke, on the Ypres road. Wounded were brought back from it to an advanced dressing station on the same road at a school, half a mile west of Verlorenhoek, by the field ambulance transport, and from there to Ypres to main dressing stations of No. 85 and No. 86 Field Ambulances established in an asylum in the Rue Thorout and in the Institute of the Holy Family. No. 85 Field Ambulance bearers collected wounded from the aid posts south of the Zonnebeke road and No. 86 from those north of the road, the average number being fifty each evening suffering chiefly from bullet, hand grenade and trench mortar wounds. No. 84 Field Ambulance was in a school in Poperinghe.

Colonel G. L. Foster, the A.D.M.S. of the 1st Canadian Division, had two advanced dressing stations, one open by No. 2 Canadian Field Ambulance in Wieltje, and the other by No. 3 in a farm—Hampshire Farm—about one mile north-west of that place, near the Wieltje–Boesinghe road. The regimental aid posts from which wounded were collected on the left sector were in St. Julien, and also at points about

one to two miles north-east of it at the west and north-west of the Gravenstafel ridge. The aid posts of its right sector were near the cross-roads half way between St. Julien and Zonnebeke. No. 2 Canadian Field Ambulance had its main dressing station in the northern suburb of Ypres, and No. 3 in a school in Vlamertinghe. No. 1 was running a divisional rest station at Watou, in a back area. The practice in this division was to keep the motor ambulance wagons at the advanced dressing stations and send them forward to the regimental aid posts immediately after dark, the slighter cases finding their own way back on foot to Wieltje. Evacuation from the advanced dressing stations was down the St. Julien–Ypres road to No. 2 Canadian Field Ambulance and across the Canal through Brielen, where the A.D.M.S. had his headquarters, to No. 3.

It will thus be seen that before the 22nd April all three divisions of the Vth Corps in the Salient had concentrated their main dressing stations in Ypres, with the exception of the one main dressing station of the Canadian Division at Vlamertinghe, and had their third field ambulance in or near Poperinghe as a divisional rest station.

The general line of evacuation was by the Menin, Zonnebeke and St. Julien roads, converging at Ypres, No. 4 Motor Ambulance Convoy being employed in clearing from the main dressing stations there and at Vlamertinghe along the Ypres–Poperinghe road to the casualty clearing stations in Poperinghe.

But in addition to the main dressing stations of the Vth Corps in Ypres, the 5th Division of the IInd Corps was also evacuating its wounded to Ypres from the south-east of the Salient by the Verbrandenmolen road. The division had been heavily engaged, as noted above, in attacks and counter-attacks on Hill 60, about two miles south-east of Ypres, since the 17th April, when it captured the hill, and had a central dressing station open by No. 14 Field Ambulance, assisted by 3 officers and 101 other ranks of No. 13, and 2 officers and 93 other ranks of No. 15, in the Asylum at the western approach to Ypres. The grouped bearer divisions of the ambulances were in the wood south of Verbrandenmolen, collecting the wounded to an advanced dressing station at the railway crossing further back. The headquarters of No. 13 and No. 15 Field Ambulances were at Boeschepe and Reninghelst respectively. No. 3 M.A.C. was employed in clearing the central dressing station to Bailleul, but, owing to the fact that the

field ambulances of the division had not yet been provided with motor ambulance cars, ten of the cars from No. 4 M.A.C. were attached to No. 14 Field Ambulance during the battle.

Situation in Ypres before 22nd April.

The whole of these medical arrangements in Ypres were, however, completely disorganized just before the gas attack of the 22nd April. Ypres for some days previously had been heavily shelled, and had become so dangerous that all units were ordered out of it by the G.O.C. of the Vth Corps on the 20th and 21st April. No. 81 Field Ambulance went to a windmill between Brielen and the Canal, leaving half its personnel in casements on the ramparts, to which the patients had been removed, but it was shelled out of its new position on the 22nd and went to L'Ebbé Farm, north-west of Poperinghe, and billeted there with No. 83. No. 82 Field Ambulance went back to a farm at the Reninghelst–Elverdinghe and Ypres Poperinghe cross-roads, west of Brandhoek. No. 85 Field Ambulance marched to Poperinghe and No. 86 to farms on the Ypres road about one and a half miles west of Poperinghe. The main dressing station of No. 2 Canadian Field Ambulance, however, remained in the northern suburb of Ypres for a day or two longer. No. 14 Field Ambulance was suddenly ordered to abandon its position in the Asylum, west of Ypres, when the gas attack took place. It went back to Reninghelst, leaving a detachment at a farm on the Dickebusch road, south of the Asylum, to form an advanced dressing station, from which the wounded were now taken by the ambulance cars of No. 4 M.A.C. to the casualty clearing stations in Poperinghe.

Consequently when the gas attack was launched on the afternoon of the 22nd April there was practically no main dressing station thoroughly established in the Vth Corps, except that of No. 3 Canadian Field Ambulance at Vlamertinghe, although all the collecting posts and advanced dressing stations were in the positions already described.

Outline of the Operations.

The effect of the gas attack on the military situation is common knowledge. The French, African and Territorial troops fell back before it to the Canal between Boesinghe and Steenstraate, leaving a wide gap exposing the left of the Canadian Division, which kept its line intact but bent back

in a direction parallel to the west of the St. Julien–Ypres road in order to get in touch with the French right. The 13th Brigade from the 5th Division and the 1st Canadian Brigade, which had been in rest billets, were thrown rapidly into the gap, and had re-established contact with the French on the 23rd April. Reinforcements were brought up from the Cavalry Corps, IIIrd Corps and First Army. The 4th Division came from the IInd Corps and took up the line of the Canadian Division, which was withdrawn to rest on the 26th April. The Northumbrian Division was wedged in between it and the 28th Division. The Lahore Division from the First Army and the 2nd Cavalry Division were also attached to the Vth Corps and took part in the battle. The enemy succeeded in breaking through at St. Julien on the 24th April. The troops in the Salient were being subjected all this time to attacks along the whole line and to very heavy artillery fire. It was only by pushing up these fresh units from the south that the line was held or that attempts could be made by counter-attacks chiefly in the neighbourhood of St. Julien to restore it. It then became necessary to contract the Salient to a new line of trenches in a semi-circle some three miles distant from Ypres as a centre. This new line ran from the railway crossing on the Canal, south-east of Boesinghe, across the St. Julien road half-way between that place and Wieltje, through Frezenberg on the Zonnebeke road and in front of Hooge on the Menin road, to the railway north of Hill 60 and on to St. Eloi. The withdrawal to it took place on the night of the 3rd/4th May, and the Ypres Salient was then held by the 27th, 28th and 4th Divisions, with the 5th Division on the right and the French on the left. The Canadian Division was then being moved to the First Army and the Lahore Division also rejoined the Indian Corps, from which it had been detached.

After the withdrawal to the new line there was a short pause in the fighting, but from the 8th to the 13th May the enemy again made determined attacks to break through in the neighbourhood of Frezenberg. The Cavalry Corps was brought into the line there on the 12th May in relief of the 28th Division. After the enemy had failed to break through fighting again died down until the 24th May, when a sudden and violent outburst of gas, which was repeated on the 25th May, took place against the trenches in front of Hooge, and north of the Menin road. The line was then consolidated somewhat nearer Ypres, and the series of battles known as the Second Battle of Ypres came to an end.

Although the attempts to break through at several points had been constant, and asphyxiating gas had been used whenever the weather was favourable, and the whole Salient, together with Ypres and the villages and towns as far as Poperinghe, was continuously under shell-fire, there were four distinct phases in the battle; first, the fighting in the neighbourhood of Gravenstafel, on the 22nd and 23rd April, when the Canadian Division held the line north of St. Julien and restored the gap between it and the French; second, the attack and break through at St. Julien and the counter-attacks to restore the line between the 24th April and 3rd May, during which period the Canadian, 4th, Northumbrian and Lahore Divisions and 2nd Cavalry Division were engaged; third, the attacks on Frezenberg, between the 8th and 13th May, against the 28th Division and the 1st and 3rd Cavalry Divisions; and, fourth, the gas attack on the 24th and 25th May in the vicinity of Bellewaarde and Hooge. Before this attack took place the 27th Division had been withdrawn to rest from the trenches there on relief by the 1st Cavalry Division and the 28th Division, the gas being thus directed against them.

During the first and second of these phases the 5th Division of the IInd Corps was also actively engaged on the right of the 27th Division. It had captured Hill 60 on the 17th April, and held it against strong counter-attacks until the 4th May, when the enemy recaptured the position after a severe gas attack.

Weather.

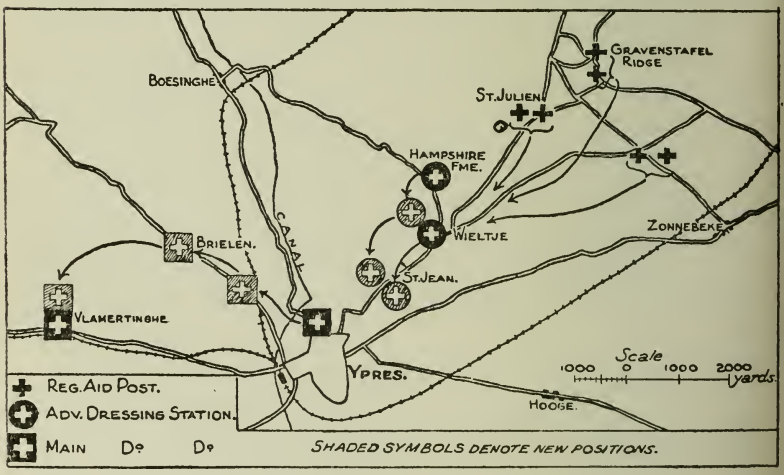
The weather during the first two phases was continuously bright and sunny, with the exception of the 2nd May, when there was some fine rain. It remained fine with only occasional rain until the 13th and 14th May, when it rained all day. From the 14th to the 22nd May, with the exception of the 16th May, which was bright and sunny, the days were dull, with occasional rain. On the 23rd May it rained heavily, but on the 24th and 25th May the weather was bright, sunny and warm.

The Medical Situation during the Battles.

Field Ambulances.—Until the 30th April the main dressing stations of the divisions engaged were concentrated in Vlamertinghe. The resources of the Canadian medical services were taxed there to their utmost. Not only was No. 3 Canadian Field Ambulance the only main dressing station on which

the Vth Corps could rely when the first gas attack was launched, but streams of French and African troops gassed or wounded poured into the dressing stations of the Canadian Division, large numbers passing through Brielen and finding their way to Vlamertinghe. During the night of the 22nd/23rd April the casualties amongst the Canadians were also severe, and their advanced dressing stations rapidly became congested.

By the morning of the 23rd April Colonel Foster, realizing the gravity of the situation, brought up all his field ambulances to Vlamertinghe, leaving only a small detachment to carry on a divisional rest station at Watou. The main dressing



station of No. 2 Canadian Field Ambulance had been moved from Ypres that day and opened in a school in Brielen, but it was shelled out the following day and was also withdrawn to Vlamertinghe. One section of it, however, was left in a château near the railway crossing on the Ypres–Brielen road to act as an advanced dressing station for the 1st Canadian Infantry Brigade when it was thrown into the line across the Canal in the gap between the Canadian left and the French, the regimental aid posts of the brigade being established along the bank of the Canal.

The advanced dressing station of No. 3 Canadian Field Ambulance in Hampshire Farm was withdrawn to Wieltje

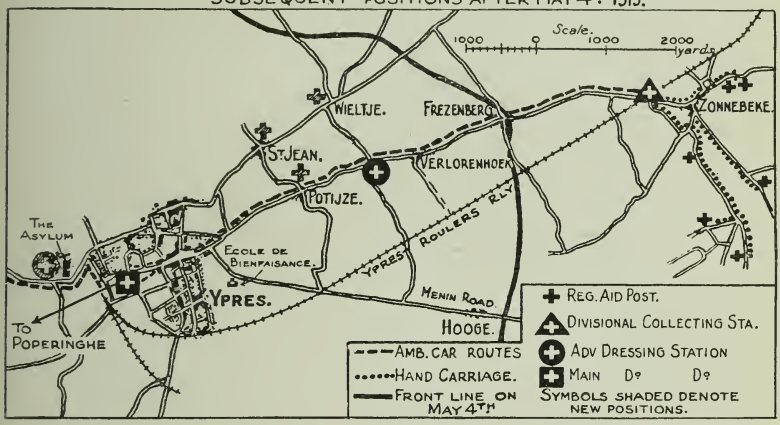
at 7.30 p.m. on the 22nd, but both it and the advanced dressing station of No. 2 were shelled out of that place and reopened at St. Jean.

St. Jean then became a centre of advanced dressing stations for all the divisions engaged in the north-east sector of the Salient.

On the 24th April, when the 4th Division was thrown into the line, No. 10 Field Ambulance was placed at the disposal of the A.D.M.S. of the Canadian Division to work in conjunction with his field ambulances, and it, too, formed a main dressing station at Vlamertinghe alongside No. 3 Canadian, with an

BATTLES OF YPRES 1915.

POSITION OF MEDICAL SERVICES 28TH DIVISION ON 22ND APRIL, SHOWING SUBSEQUENT POSITIONS AFTER MAY 4TH 1915.



advanced dressing station at St. Jean. It worked with the Canadian field ambulances until they were withdrawn from the line on the 4th May.

A tent sub-division and the bearer division of No. 12 Field Ambulance of the 4th Division, together with its ambulance cars, were also placed at Colonel Foster's disposal on the 25th April and they, too, formed an advanced dressing station at St. Jean.

The 28th Division advanced dressing station, near Verlorenhoek, was struck by a shell on the 23rd April and was withdrawn to Potijze, where it acted as a collecting post, and a similar collecting post was established by No. 86 Field Ambulance of the division on the following day in St. Jean. Both these posts were cleared to the main dressing stations of the Canadian division in Vlamertinghe.

When the Lahore Division was transferred to the Vth Corps on the 24th April the D.M.S. of the Second Army arranged for No. 111 Indian Field Ambulance to open in a school at the Monastery on Monts des Cats as a casualty clearing station for Indians, with one of its sections as an infectious hospital for them in Godewaersvelde. Another section was sent to assist in the casualty clearing station at Hazebrouck. On the 26th April, when the division went into the fighting line, No. 8 British and No. 112 Indian Field Ambulances opened their main dressing stations in Vlamertinghe, the former working alongside No. 3 Canadian Field Ambulance for the reception of British, while the latter received Indian casualties. The bearer divisions of both these field ambulances also opened advanced dressing stations, No. 8 British Field Ambulance at St. Jean, and No. 112 Indian Field Ambulance at La Brique, in the northern suburb of Ypres. No. 7 British Field Ambulance and No. 113 Indian Field Ambulance were kept in reserve at Ouderdom.

The advanced dressing stations of the Lahore Division were heavily shelled on the 27th April and were withdrawn, but one officer with forty bearers and an assistant or sub-assistant surgeon of the Indian Subordinate Medical Department remained at each to form a collecting post. They were relieved on the 28th April by bearers from No. 7 British and No. 113 Indian Field Ambulances. Those of No. 8 British and No. 112 Indian Field Ambulances had been steadily at work since the evening of the 26th and were completely exhausted.

As the Lahore Division field ambulances had not yet been provided with motor ambulance transport, eight motor ambulance cars had been allotted to them by the D.M.S. of the Second Army.

The field ambulances of the Northumbrian Division did not open main dressing stations for the reception of the wounded but assisted the casualty clearing stations in Poperinghe and in the evacuation of the wounded.

Vlamertinghe thus became a combined main dressing station centre and St. Jean a combined advanced dressing station for all the divisions engaged in the north-east sector of the Salient during the first two phases of the battle.

The main dressing stations, notwithstanding the shelling of the town, kept open at Vlamertinghe as long as possible but the situation there became untenable by the 30th April, and the field ambulances had to abandon their posts there, just as on the 20th and 21st April they had to abandon Ypres.

No. 1 Canadian Field Ambulance returned to Watou, No. 2 went back to Hillehoek, three miles south-west of Poperinghe on the road to Steenvoorde, and No. 3 moved southwards to Ouderdom. The field ambulances of the Lahore Division also went to Ouderdom, and returned to the First Army area with the division at the beginning of May. No. 111 Indian Field Ambulance remained, however, at Monts des Cats till the 11th May. With the exception of No. 84 Field Ambulance at Poperinghe and No. 83 at L'Ebbé Farm, near it, the field ambulances of the 28th and 27th Divisions were parked north

The Mill, Vlamertinghe, where Dressing Stations were constantly established behind the Ypres Front.

and south of the Ypres–Poperinghe road, about one and a half miles east of Poperinghe, but opened dressing stations on the 2nd May in Poperinghe (No. 82 Field Ambulance), Brandhoek (No. 81), and Hooggraaf Farm (No. 85) on the Westoutre road south of Poperinghe. No. 86 went to a farm near the railway about one and a half miles south-west of Poperinghe, a locality which became known as Remy Siding, and which became eventually an important casualty clearing station centre. No. 10 Field Ambulance took up a position on the Elverdinghe road, about one and a half miles north-east of Poperinghe, with an advanced dressing station in the brewery one mile west of Vlamertinghe. No. 12 Field Ambulance was at a farm on the Reninghelst–Brandhoek road.

When the 2nd Cavalry Division became attached to the Vth Corps, the personnel and transport of its medical units were also employed in assisting the medical services of the Canadian Division. But on the 26th April, when the division went into the reserve trenches in front of Potijze, between the Zonnebeke and Menin roads, collecting posts were formed by No. 5 Cavalry Field Ambulance at the White Château on the Menin road, about one mile east of Ypres, with a main dressing station at the cross-roads on the Poperinghe road, one mile west of Ypres. The latter, however, had to be abandoned on the 28th April owing to heavy shell-fire, leaving a small detachment as an advanced dressing station. The unit moved to Reninghelst, where it opened an emergency dressing station for wounded passing through on their way to Bailleul.

The Motor Ambulance Transport.—The work of bringing wounded back from the advanced dressing stations and collecting posts at St. Jean, Potijze and elsewhere was one of great danger and difficulty. The distance from Vlamertinghe was great, and, in order to get the wounded back rapidly, not only the motor ambulance transport of the field ambulances but also many of the cars of the motor ambulance convoys, chiefly of No. 4 and No. 5, had to be sent up through Ypres to these advanced posts. The work of these cars and of the drivers was constant during the whole of this time, and, owing to the heavy bombardment of Ypres and of the roads leading from it into the Salient, a large number of the motor ambulance cars was damaged and several of the drivers wounded. In some instances the cars had been sent forward in advance of St. Jean. Thus, on the 24th April, when the emergency was great, twenty-five cars of No. 3 M.A.C. had been ordered by the D.M.S., Second Army, to go up to St. Julien. The order was received at 2.15 a.m. and the cars left at 2.45 a.m. They cleared 131 wounded under heavy rifle and shell-fire, bringing them back to Bailleul, but it was daylight before the work was finished ; eighteen of the cars were hit by bullets and other missiles, and two of the drivers wounded. The British front line at the time was parallel to and west of the Ypres–Poelcappelle road, along which the cars had to work, and as St. Julien was only some 500 yards distant from the line it was scarcely a road along which ambulance cars could move with safety in daylight.

The motor ambulance cars of the field ambulances suffered even more severely in attempts to clear wounded in advance of St. Julien. Many of the cars were also damaged during

their journey through Ypres. Great efforts were made to recover some of the damaged cars by the field ambulance workshop units, notably by that of the 28th Division, the foreman of the workshop unit of this division losing his life in Ypres in the attempt to recover a car which had been damaged on the 24th April.

Many other instances of heroic efforts to bring the wounded back, in some cases from positions where they were lying between the enemy and British lines, have been recorded, the most notable perhaps being the work of Captain F. A. C. Scrimger, of the C.A.M.C., who was awarded the Victoria Cross for his gallantry in getting wounded back on the 25th April from in front of Wieltje whilst medical officer in charge of the 14th Battalion of Canadian Infantry; but there were other fine examples of heroic work not only on the part of the R.A.M.C. personnel but also on the part of the drivers of ambulance wagons and cars, especially those of No. 4 and No. 5 M.A.Cs., the former being men employed by the B.R.C.S., and not yet enlisted soldiers of the A.S.C., and therefore dependent on voluntary aid for compensation to their families in the event of their losing their lives or becoming disabled.

Between the 22nd and 30th April, during the time the main dressing stations remained in Vlamertinghe, and up to the end of the second phase on the 4th May, 304 wounded officers and 9,739 other ranks had passed through the Canadian field ambulances. The D.D.M.S. of the Vth Corps, Colonel C. E. Nichol, assisted by his D.A.D.M.S., Major A. E. S. Irvine, was in charge of the arrangements for clearing the field ambulances to the casualty clearing stations. In addition to No. 4 M.A.C., No. 5 M.A.C. was temporarily placed at his disposal from the Cavalry Corps on the 24th April until the 7th May, when it went to Hazebrouck and rejoined the Cavalry Corps. Twenty-five cars of No. 8 M.A.C. were transferred from the First to the Second Army on the 23rd April under orders from G.H.Q., and twenty more on the following day. The First Army also sent twenty cars from No. 7 and twenty from No. 2 M.A.Cs. to the Second Army on the 26th April to clear Indian casualties to the Lucknow and Lahore C.C.Ss. at St. Venant and Lillers. In addition to the motor ambulance convoys, omnibuses, lorries, general service wagons and other available vehicles were employed for bringing back the lighter cases to Hazebrouck, Bailleul and St. Omer. Cars from No. 1 M.A.C. from St. Omer were also employed from time to time. On the 2nd May the cars of No. 8 M.A.C. returned to the First Army, and on the 8th

May, No. 6 M.A.C. was transferred from the Second to the First Army and replaced by No. 9 M.A.C. from England. The total number of motor ambulance cars available in the Second Army during the battles was 240 with field ambulances and 275 with convoys.

The Casualty Clearing Stations.—The medical services had, however, to face still further difficulties, for both Vlamertinghe and Poperinghe were being searched by the enemy's high explosive shells and no longer safe. On the 27th April the two casualty clearing stations at Poperinghe had consequently to be moved, No. 3 C.C.S. going to Bailleul and No. 5 to Hazebrouck.* No. 84 Field Ambulance of the 28th Division, however, remained in Poperinghe, and acted as a casualty clearing station there for casualties which happened to be sent back through Poperinghe. But, after the casualty clearing stations left, wounded were diverted to the casualty clearing stations at Bailleul by way of Reninghelst, or were brought back by the long road journey to Hazebrouck. At the beginning of May two other field ambulances, No. 81 and No. 82 of the 27th Division, went to Poperinghe and opened in the buildings previously occupied by No. 3 C.C.S.

Two sections of the Lucknow C.C.S. had been warned to be ready to move from the First Army to the Second Army at a moment's notice, when the Lahore Division was sent to the Salient. The first section left St. Venant on the morning of the 28th April an hour after the order for the move was received, and the second section in the evening. They opened in Hazebrouck. One of the sections returned to St. Venant on the 5th and the remaining section on the 11th May.

The 7th Division was transferred temporarily from the First to the Second Army on the 28th April, but was kept in the back area in reserve. It returned on the 4th May. Its sick were transferred to the First Army casualty clearing stations in Merville during the time it was with the Second Army.

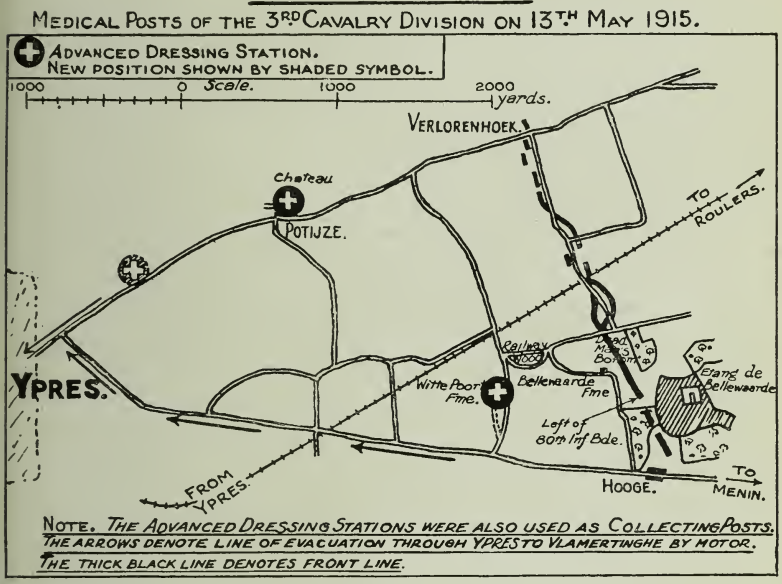
The First Army also helped the Second Army casualty clearing stations by sending groups of three medical officers, one nursing sister and ten other ranks from the London C.C.S. in Merville to the South Midland C.C.S. and from the Canadian C.C.S. in Fort Gassion to No. 10 C.C.S., both then in Hazebrouck. Similar help was obtained from hospitals on the lines of communication.

* No. 5 C.C.S. had not completely opened in Poperinghe, the bulk of the unit being in Hazebrouck, and in fact was scarcely in a position to take in wounded.

The Medical Situation during the Frezenberg Operations.

After the new line had been taken up on the 4th May and during the third phase of the battle, when the enemy attacks were directed chiefly against the Frezenberg sector, the Canadian Division had left the Vth Corps and was replaced by the 4th Division. The Cavalry Corps took over the line previously occupied by the 28th Division on the 12th May.

During this period the advanced dressing stations of the 4th Division were formed by No. 10 and No. 12 Field Ambulances


BATTLES OF YPRES 1915.
MEDICAL POSTS OF THE 3RD CAVALRY DIVISION ON 13TH MAY 1915.
ADVANCED DRESSING STATION.
NEW POSITION SHOWN BY SHADED SYMBOL.
1000 0 Scale. 1000 2000 yards.
VERLORENHOEK.
Chateau
POTIJZE.
TO ROULERS.
YPRES.
Railway
Witte Poort Fme.
Bellewaarde Fme
Etang de Bellewaarde
Left of 60th Inf Bde.
FROM YPRES
HOOGE.
TO MENIN.
NOTE. THE ADVANCED DRESSING STATIONS WERE ALSO USED AS COLLECTING POSTS.
THE ARROWS DENOTE LINE OF EVACUATION THROUGH YPRES TO VLAMERTINGHE BY MOTOR.
THE THICK BLACK LINE DENOTES FRONT LINE.

at the brewery west of Vlamertinghe and in Vlamertinghe. The main dressing stations of the division were north-east of Poperinghe on the Elverdinghe road between Oosthoek and Poperinghe. The 27th Division had its field ambulances at Brandhoek, Remy Siding and north-east of Poperinghe; while those of the 28th Division were at Hooggraaf and Wippenhoek, north-west of Poperinghe, with an advanced dressing station in the asylum west of Ypres.

When the 1st and 3rd Cavalry Divisions were in the fighting line they were subjected to very heavy attacks on the evening of the 13th May and suffered severely. They were relieved on the 14th May by the 2nd Cavalry Division.

The ambulances of the 1st Cavalry Division had opened a main dressing station with No. 3 Cavalry Field Ambulance in a school at Vlamertinghe and with No. 1 Cavalry Field Ambulance at the level crossing one and a half miles west of Ypres. All the available ambulance transport and stretcher bearers of the Cavalry Corps, together with No. 5 M.A.C. were employed in bringing wounded back to them from collecting posts in front of Potijze on the night of the 13th/14th May.

No. 7 and No. 8 Cavalry Field Ambulances of the 3rd Cavalry Division had a collecting post in the château at Potijze and

The Ecole de Bienfaisance, Ypres, constantly used as a Dressing Station.

another at Witte Poort Farm, one mile east of the railway crossing on the Menin road, with an advanced dressing station in an estaminet three-quarters of a mile east of Ypres. All three ambulances of the 3rd Cavalry Division formed a main dressing station at the cross-roads, half-way between Poperinghe and Vlamertinghe. Great difficulty was experienced in keeping touch with the collecting post at Witte Poort Farm, which, during daylight on the 13th May, was completely cut off. It was impossible to get ambulance cars through until night-time. Even then the conditions were extremely unfavourable for clearing the post by motor transport. The approach to the farm was a narrow, muddy road, and it was raining

heavily. The enemy was only a few hundred yards distant, and the wounded had been collected for safety into narrow dug-outs. Consequently the process of getting them out, loading them on the cars and turning the cars was so slow that the final evacuation of the post was not effected until after daybreak. The visibility was fortunately poor and no casualties occurred. During the day, when touch could not be maintained, Serjeant Wachthorn, R.A.M.C., No. 6 Cavalry Field Ambulance, gallantly went back through a storm of fire to report the situation to the officer commanding the unit and returned with a supply of dressings.

Much gallantry was also displayed by the R.A.M.C. of the 27th Division on the right of the Cavalry. Its main dressing station was at Brandhoek in charge of No. 81 Field Ambulance. The bearers of all field ambulances occupied in turn an advanced dressing station in the cellars of the Ecole de Bienfaisance, east of Ypres, on the Menin road, and collected wounded to it from the regimental aid posts under conditions of much difficulty and danger. Thus, on the 12th May, the bearers of No. 82 Field Ambulance, coming under heavy shell, rifle and machine gun fire, in the performance of their duty, had four of their number killed and seven wounded out of a total of seventy.

The 4th Division on the cavalry left was also actively engaged and had an advanced dressing station at St. Jean. The motor ambulance cars came up to collecting posts near the Canal, north-west of Ypres, and at La Brique, horsed ambulance wagons being used between these places and St. Jean. The main dressing station was at Vlamertinghe brewery.

The Medical Situation during the Operations on Bellewaerde Ridge.

The last determined attempt on the part of the enemy to break through was by a strong discharge of large quantities of gas, accompanied by heavy rifle and artillery fire, about 3 a.m. on the 24th May. The intervening days between the 14th May and that date had been comparatively quiet on the Vth Corps front. It was the period of severe battles in the First Army area.

The attack was made on the trenches in the neighbourhood of the Menin road near Hooge, part of the British line being driven back. The 28th Division was occupying a line of trenches through Hooge from the railway line north of the Menin road

to some 1,500 yards south of the road. The 1st Cavalry Division field ambulances were in Vlamertinghe and at the level crossing as in the attack in the previous phase. No. 9 Cavalry Field Ambulance had joined the division from England on the 21st May, and took its turn at these posts. They were relieved by the ambulances of the 2nd Cavalry Division on the night of the 24th/25th May. The line occupied by the cavalry was on the right of the 28th Division in Sanctuary Wood in front of Zillebeke. The cavalry collecting posts were then at the brickfields north of Zillebeke and in the Ecole de Bienfaisance, east of Ypres. On the 25th May the advanced dressing station at the level crossing west of Ypres was shelled, four of the R.A.M.C. and four of the A.S.C. drivers being wounded, two horses killed and two wounded, and five motor ambulance cars damaged. The dressing station was then moved further back to a safe spot on the road half-way between the level crossing and Vlamertinghe.

During this phase of the battles, the majority of the casualties were from gas, many being sufficiently slight to enable the men to return to duty without being evacuated to the casualty clearing stations. From the commencement of the attack in the early morning up to noon of the 24th May, 2,890 casualties were admitted, and between noon of the 24th and noon of the 25th May, 2,357, the number of gassed cases amongst them being more than half these numbers. The weather was fortunately fine and they could be treated in the open air. They were chiefly from the 28th Division, but had been collected to the dressing stations of the 4th Division and 1st and 2nd Cavalry Divisions. In addition 50 officers and 1,570 other ranks, of whom 226 were gassed, passed through the dressing stations of the 28th Division in the Asylum west of Ypres, and in Hooggraaf.

Casualties.

The number of wounded admitted to the field ambulances of the Second Army during the period 22nd to 30th April 1915, and from the field ambulances to the casualty clearing stations, is shown in the tables on pages 413 and 414.

On the 30th April there remained in the field ambulances only 7 officers and 106 other ranks, and in the casualty clearing stations 24 officers and 300 other ranks.

Full statistics for the subsequent days of the battle have not been recorded, but when the British forces were attacked

Wounded Admitted into Field Ambulances of the Second Army from 22nd to 30th April, 1915.

Divisional Field Ambulances.	22nd-23rd		23rd-24th		24th-25th		25th-26th		26th-27th		27th-28th		28th-29th		29th-30th		Total.	
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.
3rd Division	2	23	—	14	2	23	1	14	—	36	5	55	2	22	—	22	12	209
4th Division	—	10	—	4	—	10	1	4	6	301	6	352	8	242	4	153	25	1,076
5th Division	12	245	1	55	6	252	7	271	3	42	10	93	9	108	2	18	50	1,084
6th Division	2	13	—	8	2	13	—	8	1	21	4	11	—	15	—	12	9	101
27th Division	—	36	3	22	6	186	8	238	13	422	2	210	6	220	—	83	38	1,417
28th Division	4	136	6	349	4	280	11	637	17	791	3	140	9	264	9	286	63	2,883
46th Division	3	14	—	11	3	14	—	11	1	16	1	11	—	11	—	12	8	100
48th Division	—	14	—	6	—	14	—	6	—	3	—	2	—	13	—	3	—	61
50th Division	—	—	—	—	—	—	—	—	—	—	13	616	12	444	3	180	28	1,240
Canadian Division ..	40	671	16	402	40	671	16	402	4	183	6	260	3	112	1	60	126	2,761
Lahore Division ..	—	—	—	—	—	—	—	—	—	—	20	198	11	184	9	305	40	687
Total	63	1,162	26	871	63	1,463	44	1,591	45	1,815	70	1,948	60	1,635	28	1,134	399	11,619

Three Officers and 159 Other Ranks of the Cavalry Divisions, admitted during this period, are not included in above totals.

Wounded admitted from Field Ambulances to Casualty Clearing Stations of the Second Army, 22nd to 30th April 1915.

Casualty Clearing Station.	22nd–23rd	23rd–24th	24th–25th	25th–26th	26th–27th	27th–28th	28th–29th	29th–30th	Total.
No. 2	40	131	7	206	144	278	202	216	1,224
No. 3	560	449	404	450	393	—	—	—	2,256
No. 5	180	118	422	249	—	—	77	52	1,098
No. 8	38	114	192	183	209	433	312	434	1,915
No. 10	67	79	322	336	739	654	455	284	2,936
North Midland ..	53	22	139	31	175	132	146	85	783
South Midland ..	76	84	40	180	200	453	489	121	1,643
Total	1,014	997	1,526	1,635	1,860	1,950	1,681	1,192	11,855

with gas during the first half of May, the following statement of gas casualties day by day was submitted by the D.M.S. of the Army* :—

Date : May, 1915.	No. of Gas Cases.	Remarks.
2nd	305	—
3rd	Considerable.	90 said to have died in trenches from gas.
4th	—	—
5th	Large Number.	About 400 in the 4th Division.
6th	1,193	—
7th	656	—
8th	64	—
9th	9	—
10th	10	—
11th	16	—
12th	11	—

Although the admissions to the field ambulances and casualty clearing stations during May have not been recorded, the table showing the number of wounded evacuated by ambulance trains between the 22nd April and 27th May indicates the extent of the work thrown upon the medical units of the Second Army.

Evacuation of the wounded to the Base.

Between the 22nd April and 27th May, ambulance trains made 148 journeys to the Second Army area, and evacuated a total of 41,496 sick and wounded British, 1,105 Indians and 31 Germans to the base hospitals, as shown on the following table. About 100 of the journeys were to Boulogne, and about half the number of patients evacuated were wounded or gassed. The greatest number of ambulance trains required on any one day was nine, on the 27th April, when 2,806 sick and wounded were evacuated. As a rule the number of ambulance trains running daily to the Second Army area between the 22nd April and 15th May was three, five or seven.

Improvised trains had also to be employed to supplement the ambulance trains on the 24th, 25th and 26th April and also on the 3rd, 9th and 25th May. On the 24th and 25th April they cleared sick and wounded from Poperinghe. On the 26th April, three improvised trains took sick and wounded back from Bailleul and Hazebrouck. On the 3rd and 9th May an improvised train went from Bailleul, and on the 9th and 25th May from Hazebrouck. Supply trains had also to be used for evacuating slighter cases of sickness from Bailleul on the 26th April and 23rd May.

* Surgeon-General F. Treherne was acting as D.M.S. of the Second Army during this time in the absence of Surgeon-General R. Porter.

Second Battle of Ypres.

Evacuations by Regular Ambulance Trains. 22nd April—27th May 1915.

Date.	A. T. No.	Loaded at	Detrained at	Patients carried sick and wounded.			
				British.	Indian.	P. of W.	Total.
Apr. 22	1	Poperinghe	Boulogne	159	—	—	159
	9	Bailleul and Hazebrouck .	Etaples	207	—	—	207
	12	Poperinghe	Boulogne	193	—	—	193
			Total	559	—	—	559
,, 23	1	Hazebrouck	Boulogne	287	—	—	287
	4	Bailleul and Hazebrouck .	Boulogne	221	—	—	221
	12	Poperinghe	Boulogne	225	—	—	225
			Total	733	—	—	733
,, 24	7	Bailleul	Boulogne	288	—	—	288
	10	Hazebrouck	Rouen	474	—	—	474
	11	Poperinghe	Boulogne	175	—	—	175
	12	Bailleul	Boulogne	236	—	1	237
			Total	1,173	—	1	1,174
,, 25	8	Bailleul	Boulogne	216	—	—	216
	9	Bailleul	Boulogne	217	—	—	217
	11	Poperinghe	Boulogne	282	—	1	283
	12	Poperinghe	Le Treport	250	—	—	250
	16	Poperinghe	Boulogne	311	—	—	311
	17	Hazebrouck	Boulogne	365	—	—	365
			Total	1,641	—	1	1,642
,, 26	1	Bailleul	Boulogne	266	—	—	266
	2	Bailleul	Boulogne	189	—	2	191
	6	Bailleul and Hazebrouck .	Boulogne	128	—	—	128
	6	Hazebrouck	Boulogne	114	—	—	114
	11	Hazebrouck	Rouen	200	—	1	201
	17	Hazebrouck	Boulogne and Le Treport .	383	—	1	384
			Total	1,280	—	4	1,284
,, 27	1	Hazebrouck	Boulogne	331	9	—	340
	2	Hazebrouck and Godewaersvelde.	Le Havre	183	118	—	301
	6	Bailleul	Boulogne	201	4	1	206
	8	Hazebrouck	Rouen	259	—	—	259
	9	Poperinghe	Rouen	293	—	—	293
	10	Bailleul and Hazebrouck .	Boulogne	464	26	—	490
	12	Hazebrouck	Le Havre	280	—	—	280
	16	Hazebrouck	Boulogne	217	—	—	217
	17	Hazebrouck	Boulogne	420	—	—	420
			Total	2,648	157	1	2,806
,, 28	1	Hazebrouck	Boulogne	247	93	—	340
	3	Hazebrouck	Boulogne	185	—	—	185
	5	Bailleul	Etretat	238	1	—	239
	7	Bailleul	Boulogne	277	—	—	277
	10	Hazebrouck	Boulogne	—	491	—	491
	16	Hazebrouck	Rouen	406	—	—	406
	17	Hazebrouck	Boulogne and Rouen ..	421	—	—	421
			Total	1,774	585	—	2,359

Date.	A.T. No.	Loaded at	Detrained at	Patients carried sick and wounded. British.	Indian.	P. of W.	Total.
Apr. 29	7	Hazebrouck	Boulogne	326	—	—	326
	8	Bailleul	Rouen	197	—	—	197
	10	Bailleul	Etretat	449	2	—	451
	11	Hazebrouck	Boulogne	343	1	9	353
			Total	1,315	3	9	1,327
,, 30	1	Bailleul and Hazebrouck	Le Treport	250	1	3	254
	4	Bailleul	Rouen	316	—	—	316
	1	Hazebrouck	Boulogne	201	163	—	364
			Total	767	164	3	934
May 1	3	Bailleul	Boulogne and Le Havre ..	230	—	—	230
	7	Hazebrouck	Boulogne and Rouen ..	331	—	—	331
	11	Bailleul	Etaples	296	—	—	296
			Total	857	—	—	857
,, 2	2	Hazebrouck	Boulogne	278	—	—	278
	5	Bailleul	Boulogne	238	—	—	238
	6	Hazebrouck	Boulogne	127	112	—	239
	8	Bailleul	Boulogne	264	—	—	264
	16	Hazebrouck	Boulogne and Rouen ..	297	—	—	297
			Total	1,204	112	—	1,316
,, 3	1	Bailleul	Rouen	270	—	—	270
	6	Poperinghe	Le Havre	169	—	—	169
	8	Bailleul	Boulogne	213	—	—	213
	11	Hazebrouck	Boulogne	103	75	—	178
	12	Bailleul	Etretat and Boulogne ..	257	—	—	257
			Total	1,012	75	—	1,087
,, 4	2	Hazebrouck	Boulogne and Rouen ..	242	—	—	242
	4	Hazebrouck	Le Treport	335	5	—	340
	5	Bailleul	Boulogne	241	—	1	242
	11	Bailleul	Boulogne	318	2	—	320
	17	Bailleul	Boulogne	378	—	—	378
			Total	1,514	7	1	1,522
,, 5	5	Bailleul	Boulogne	242	—	—	242
	8	Hazebrouck	Versailles	249	—	—	249
	9	Bailleul	Rouen	326	—	—	326
	11	Bailleul	Boulogne	374	—	—	374
	16	Bailleul	Boulogne and Le Treport	341	—	—	341
			Total	1,532	—	—	1,532
,, 6	3	Hazebrouck	Boulogne and Le Havre ..	403	—	—	403
	5	Bailleul	Boulogne	241	—	—	241
	10	Hazebrouck	Rouen	360	—	—	360
	11	Hazebrouck	Boulogne	335	—	—	335
	12	Bailleul	Boulogne	290	—	—	290
	17	Bailleul	Boulogne and Versailles ..	408	—	—	408
			Total	2,037	—	—	2,037

Date.	A.T. No.	Loaded at	Detrained at	Patients carried sick and wounded.			
					Indian.	P. of W.	Total.
May 7	4	Bailleul	Boulogne	290	—	—	290
	5	Bailleul	Boulogne	238	—	—	238
	7	Bailleul	Boulogne and Rouen ..	404	—	—	404
	8	Hazebrouck	Rouen	435	—	—	435
	11	Bailleul	Rouen	334	—	—	334
			Total	1,701	—	—	1,701
,, 8	5	Bailleul	Boulogne	256	—	—	256
	6	Hazebrouck	Boulogne	265	—	—	265
	12	Hazebrouck	Le Havre	177	—	—	177
	16	Bailleul	Boulogne and Rouen ..	370	—	1	371
			Total	1,068	—	1	1,069
,, 9	4	Bailleul	Etaples	322	—	—	322
	5	Bailleul	Boulogne	246	—	—	246
	17	Bailleul	Boulogne	415	—	—	415
			Total	983	—	—	983
,, 10	4	Bailleul	Boulogne	322	—	—	322
	6	Bailleul	Boulogne	204	—	—	204
	17	Bailleul	Boulogne	360	—	—	360
	17	Bailleul	Boulogne	381	—	—	381
			Total	1,267	—	—	1,267
,, 11	3	Bailleul	Boulogne	248	—	—	248
	4	Hazebrouck	Etaples	138	—	—	138
	8	Hazebrouck	Boulogne	233	—	—	233
	9	Bailleul	Boulogne	323	—	—	323
	10	Bailleul	Boulogne	430	—	—	430
	12	Hazebrouck	Versailles	232	—	—	232
			Total	1,604	—	—	1,604
,, 12	3	Hazebrouck	Boulogne and Le Treport	392	—	1	393
	4	Bailleul	Etaples	333	—	—	333
	11	Bailleul	Etaples	398	—	2	400
			Total	1,123	—	3	1,126
,, 13	1	Bailleul	Le Havre	384	—	—	384
	6	Hazebrouck	Etretat	88	—	—	88
	16	Bailleul	Boulogne and Rouen ..	376	—	—	376
			Total	848	—	—	848
,, 14	4	Bailleul	Versailles	342	—	—	342
	5	Bailleul	Etaples	238	—	—	238
	8	Bailleul	Boulogne	349	—	—	349
	9	Bailleul	Le Treport	335	—	—	335
	10	Bailleul	Boulogne	425	2	—	427
			Total	1,689	2	—	1,691
,, 15	3	Hazebrouck	Boulogne	334	—	—	334
	5	Bailleul	Rouen	237	—	—	237
	10	Bailleul	Versailles	285	—	—	285
	11	Hazebrouck	Le Treport	98	—	—	98
			Total	954	—	—	954
,, 16	1	Hazebrouck	Boulogne	220	—	1	221
	2	Bailleul	Boulogne	318	—	—	318
			Total	538	—	1	539

Date.	A T. No.	Loaded at	Detrained at	Patients carried sick and wounded. British.	Indian.	P. of W.	Total.
May 17	8	Bailleul	Boulogne	377	—	1	378
	11	Hazebrouck	Boulogne	49	—	—	49
			Total	426	—	1	427
,, 18	2	Bailleul	Boulogne	256	—	3	259
	7	Bailleul	Boulogne	345	—	—	345
			Total	601	—	3	604
,, 19	9	Hazebrouck and Bailleul	Boulogne—Total.. ..	303	—	—	303
,, 20	1	Bailleul	Boulogne—Total.. ..	385	—	—	385
,, 21	5	Bailleul and Hazebrouck	Rouen	235	—	2	237
	12	Bailleul	Versailles and Boulogne..	285	—	—	285
			Total	520	—	2	522
,, 22	1	Hazebrouck	Etaples	131	—	—	131
	2	Bailleul	Le Havre	351	—	—	351
			Total	482	—	—	482
,, 23	6	Bailleul	Boulogne	222	—	—	222
	16	Bailleul	Boulogne and Rouen ..	386	—	—	386
	17	Hazebrouck	Boulogne and Le Treport	46	—	—	46
			Total	654	—	—	654
,, 24	3	Bailleul	Boulogne and Versailles..	302	—	—	302
	6	Bailleul	Boulogne	263	—	—	263
	7	Bailleul	Boulogne	256	—	—	256
	8	Bailleul	Boulogne	362	—	—	362
			Total	1,183	—	—	1,183
,, 25	6	Bailleul	Boulogne	245	—	—	245
	7	Hazebrouck	Etaples	345	—	—	345
	8	Hazebrouck	Rouen	252	—	—	252
	9	Bailleul	Boulogne	323	—	—	323
	9	Bailleul	Le Havre	325	—	—	325
	10	Hazebrouck	Rouen	436	—	—	436
	17	Bailleul	Boulogne	426	—	—	426
			Total	2,352	—	—	2,352
,, 26	2	Bailleul	Boulogne	295	—	—	295
	5	Bailleul	Boulogne	236	—	—	236
	6	Hazebrouck	Boulogne	250	—	—	250
	7	Bailleul	Boulogne and Rouen ..	270	—	—	270
	11	Bailleul	Le Havre	361	—	—	361
	12	Bailleul	Boulogne and Etretat ..	249	—	—	249
	17	Hazebrouck	Etaples	403	—	—	403
			Total	2,064	—	—	2,064
,, 27	4	Hazebrouck	Boulogne	190	—	—	190
	6	Bailleul	Rouen	247	—	—	247
	14	Bailleul	Versailles	268	—	—	268
			Total	705	—	—	705

Grand Total carried by Regular Ambulance Trains :—

British	41,496
Indian	1,105
Prisoners of War	31
Grand Total ..	42,632

Lessons of the Battle.

It will be gathered from this record of the medical situation during the battles of Ypres in 1915 that the medical services of the Second Army had to contend with many difficulties. Although the actual number of casualties day by day was not greater than in previous battles, such as that of Neuve Chapelle, the attacks of the enemy were surprise attacks, and the medical services had to make hurried preparations for dealing with the mass of wounded and gassed. The conditions thus differed from those of planned battles, for which careful preparations could be made. The confusion and demoralization caused by the first gas surprise added to the difficulties, and it was only through the prompt and strenuous efforts of the administrative medical staff at G.H.Q. and at the War Office, with the co-operation of the best known chemical and physiological experts that measures were at once taken to protect the troops from the effects of this new weapon. All the medical units of both the First and Second Armies, assisted by the women of the locality where they were billeted, were called on to prepare respirators, and in a very short time thousands of face masks made of gauze and cotton waste, steeped in a solution of hyposulphite of soda, were issued to the troops. Until these were ready supplies of bicarbonate of soda were sent up to the trenches, and instructions issued to the troops to keep solutions of it, in the proportion of 1 lb. to 2 gallons of water, in receptacles in the trenches, and cover their mouths and nostrils with handkerchiefs or other cloths dipped in it whenever a gas attack was made. The solution of hyposulphite of soda was composed of 10 lbs. water, 10 lbs. hyposulphite, 2½ lbs. bicarbonate of soda, and 1 lb. glycerine. It was also kept in receptacles in the trenches and a limited number of Vermorel sprayers for spraying trenches and dug-outs with it were obtained. The development of the means of protection from gas, however, is a long story, and involved many experiments, not only for protection from chlorine, but also from the lachrymatory and other poisonous gases, which were subsequently used. The chapters on the medical aspects of gas warfare in the second volume of the Diseases of the War must consequently be referred to for details of the early efforts made to counteract the effects of gas, and for the subsequent developments of gas warfare as affecting the medical services. The immunity of the troops from the effects of gas, once the instructions and material had been issued for their protection, was more or less complete, and became a question of discipline in the care and use of the respirators.

The battle disclosed certain points in connexion with the tactical and to some extent with the strategical employment of the medical services. It showed how undesirable it was to have advanced dressing stations, under the conditions of modern warfare, close to the regimental aid posts, unless there were suitable communication trenches and dug-outs. Practically all so situated at the beginning of the battle had to be withdrawn or became merely collecting posts. It also showed the difficulty of bringing ambulance transport, especially motor ambulance transport, to very advanced positions. When this was attempted by day the damage to cars and drivers was great, and at night equally great risks to the cars were encountered in moving without lights along roads broken by shell-fire. The 28th Division, for example, in withdrawing to the new line on the night of the 4th/5th May, employed 8 officers, 150 bearers and 60 motor ambulance cars, 40 of which were from No. 4 M.A.C. to clear 994 casualties from the regimental aid posts. The roads were broken by shell-holes, and blocked with other traffic and debris, and no lights could be used. Several of the cars were damaged, but seven were recovered under fire. In subsequent battles this was realized to a great extent and wounded were brought back to tactically safe positions for motor ambulance transport by relays of bearers, or on wheeled stretcher carriers, or by trolly and light field railway lines.

On some occasions there was much difficulty in replenishing the field ambulances and their bearer divisions with stretchers, chiefly owing to the fact that the motor ambulance cars occasionally returned from unloading the wounded at casualty clearing stations without taking back the stretchers to replace those on which the wounded had been lying. In this way a large number of the normal provision of field stretchers with field ambulances was rapidly depleted without fresh stretchers coming back to replace them. The same defect was also noticed at times in connexion with the supply of blankets, although these were not so important in view of the favourable weather conditions, but the want of some definite organization for the replenishing of stretchers and blankets was at times distinctly felt.

Strategically, the general preparations for numbers of casualties and their evacuation to the base worked well, but the disadvantages of having main dressing stations and casualty clearing stations on the main line of traffic and in towns like Vlamertinghe and Poperinghe, with their important billeting

resources and within range of hostile artillery fire was clearly emphasized ; as also the necessity of having reserve convoys available for clearing the casualty clearing stations by road in the event of the railway line becoming blocked or the ambulance trains being incapable of dealing with the number of casualties. When Poperinghe was being shelled and when the railway line was required for bringing up reinforcements, evacuation by road became imperative.

The strain on the personnel of the casualty clearing stations was much greater than in the battles of subsequent years, when the casualty clearing stations were reinforced by surgical teams and detachments from other units. This strain was specially felt in No. 3 C.C.S. during the earlier days of the battle in Poperinghe, as the majority of the casualties, including the first gassed cases and many French wounded, passed through it at a time when the town was also subjected to hostile artillery fire. When the wounded were diverted from Poperinghe to Bailleul, it was found necessary to appoint an officer, Captain A. D. Stirling, R.A.M.C., to regulate the entraining and generally organize a system of distributing the incoming ambulance cars to the casualty clearing stations in the town. Before this step was taken there had been much confusion. This was obviated by a system of notice boards for use by day, and lights by night, on the road approaches to Bailleul, indicating the casualty clearing station to which casualties should be taken from hour to hour.

The number of casualties in the medical services shown in the following table, indicates the special risks incurred in the efforts of the R.A.M.C. and motor ambulance car drivers to bring the wounded back to safety under the conditions of fighting in the Ypres Salient.

Summary of Casualties. Medical Services.

	Killed or Died of W.	Wounded.	Missing.	Gassed.	P. of War.
Officers ..	2	30	1	2	2
Other ranks ..	28	102*	3	—	—
A.S.C. attached	3	17	3	—	—
Total ..	33	149	7	2	2

* Includes two Indians.

Table showing Casualties in the Medical Services.
Second Battle of Ypres—22nd April to 25th May, 1915.

	Killed.			Wounded.			Died of Wounds.			Missing.			Gassed.		Prisnrs. of War.
	R.A.M.C.		A.S.C. att'd.	R.A.M.C.		A.S.C. att'd.	R.A.M.C.		A.S.C. att'd.	R.A.M.C.		A.S.C. att'd.	R.A.M.C.		R.A.M.C.
	Offrs.	O.R.	O.R.	Offrs.	O.R.	O.R.	Offrs.	O.R.	O.R.	Offrs.	O.R.	O.R.	Offrs.	O.R.	Offrs.
IInd Corps.															
5th Division ..	—	2	—	2	9	1	—	—	—	—	—	—	—	—	—
Vth Corps.															
4th Division ..	—	2	—	3	12	4	—	—	—	—	—	—	1	—	—
27th Division ..	—	6	—	5	22	1	—	1	—	—	—	—	—	—	—
28th Division ..	—	4	1	8	23	4	—	3	2	—	1	—	—	—	2
50th Division ..	—	—	—	4	—	1	—	1	—	1 & wd.	—	—	—	—	(1 wd.) —
1st Canadian Division ..	—	2	—	4	27	2	—	5	—	—	2	3	—	—	—
Lahore Division	—	—	—	1	4*	—	—	—	—	—	—	—	—	—	—
Cavalry Corps.															
1st Cavalry Div.	2	—	—	1	1	—	—	—	—	—	—	—	1	—	—
2nd Cavalry Div	—	2	—	2	4	4	—	—	—	—	—	—	—	—	—
3rd Cavalry Div.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ..	2	18	1	30	102*	17	—	10	2	1 & wd.	3	3	2	—	2 (1 wd.)

* Includes two Indians.

In addition to the above, 24 Other Ranks R.A.M.C., of the 5th Division, were wounded in the action at Hill 60 during the period 17th to 21st April, 1915, just prior to the Second Battle of Ypres.

CHAPTER XIX.

THE BATTLES OF AUBERS RIDGE AND FESTUBERT, MAY 1915.

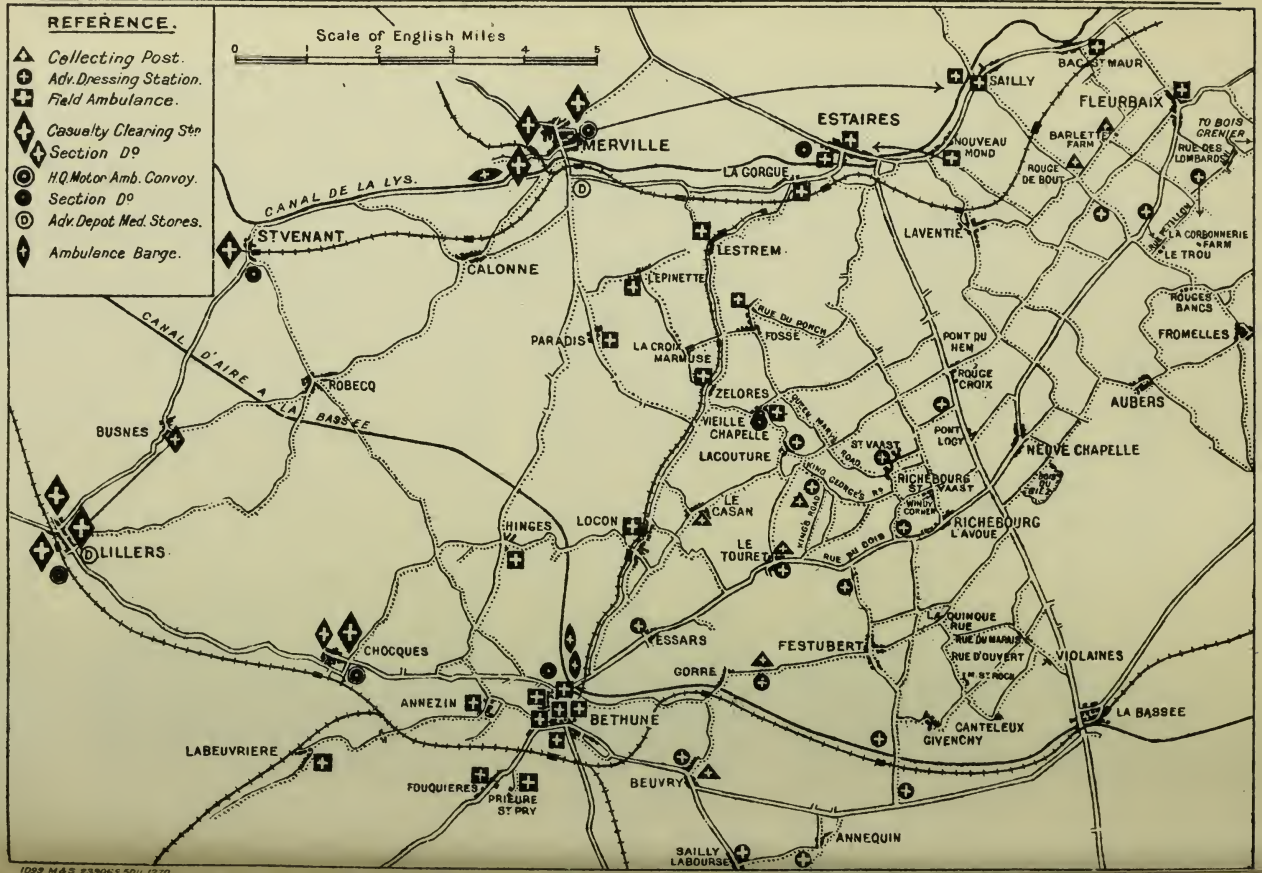
THE First Army was again engaged in active operations in May 1915, north-east and south-west of the area over which it fought during the battle of Neuve Chapelle in March. The operations were those of a prepared battle similar to that of Neuve Chapelle. They were undertaken in support of a French attack on the German lines from the north of Arras to the British right, and were part of a general attack from Arras to Armentières.

The First Army had been reinforced in March by the 47th (London) Division, and in April, after the battle of Ypres, by the 49th (West Riding) Division of the Territorial Force, and during May by the 51st (Highland) Division. The 7th Division, 1st Canadian Division, and the Lahore Division, which had been with the Second Army during the Ypres operations in April, returned to the First Army ; so that the latter had with it during the May operations ten divisions in addition to a large force of artillery.

The attack on Aubers Ridge was directed against the German line of trenches in the neighbourhood of Rouges Bancs, some 1,000 yards north-west of Fromelles. It was made by the IVth Corps from the Sailly–Bac. St. Maur sector of the front, and by the Indian and Ist Corps between Neuve Chapelle and Givenchy. It commenced on the 9th May, but the enemy's position was stronger than was anticipated. No progress was made. The attack in the direction of Fromelles was abandoned on the following day, and all available resources concentrated for an attack to the south of Neuve Chapelle on the Festubert front. This was launched on the night of the 15th/16th May, and continued with greater or less success until the 19th May, by the 2nd and 7th Divisions, and by the 51st (Highland) and 1st Canadian Divisions, until the night of the 24th/25th May, when active operations ceased.

During the operations of the 9th/10th May the Ist Corps was on the British right. The 47th (1st/2nd London) Division held the front from the Bethune–La Bassée road to the Rue

SITUATION OF MEDICAL UNITS DURING THE BATTLES OF AUBERS RIDGE AND FESTUBERT, MAY 1915.



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du Bois, about 1,000 yards south-west of Richebourg L'Avoué, and the 1st Division from that point for about one mile along the Rue du Bois towards the Estaires–La Bassée Road. The 2nd Division was in reserve behind the 1st Division, but its 4th Guards Brigade was with the 47th Division on the left of the 1st Division, in exchange with the 5th London Brigade. On the night of the 9th/10th the 2nd Division relieved the 1st Division in the front line, the latter subsequently taking over a sector south of the Bethune–La Bassée road from the French. The 7th Division joined the Ist Corps from the IVth Corps on the night of the 10th/11th May and took over the northern sector of the line held by the 47th Division from la Quinque Rue to the Rue du Bois.

The Indian Corps was holding the sector in front of Neuve Chapelle, with the Meerut Division on the right and the Lahore Division on the left, the headquarters of the latter being in Estaires.

The IVth Corps on the left of the Indian Corps consisted of the 8th and 49th (West Riding) Divisions. The 7th Division, which had temporarily been withdrawn from the IVth Corps to the Second Army area between Hazebrouck and Bailleul towards the end of April, had returned on the 2nd May but did not take an active part in the operations of the 9th May. It had moved to the area between Estaires and Sailly-sur-la-Lys, but, as noted above, was transferred to the Ist Corps on the 11th May. If the operations had been successful on the 9th May, the intention was for it to follow close in rear of the 8th Division and pass through the gap made by the latter. The task assigned to the 8th Division was to break through the enemy's line opposite Rouges Bancs and occupy the line La Cordonnerie Farm–Fromelles–Le Clercq Farm, with the 24th Infantry Brigade on the west, the 25th Infantry Brigade on the east of the Fromelles–Sailly road, and the 23rd Infantry Brigade as divisional reserve. The 49th Division was on the extreme left with orders to protect the flank of the 8th Division attack.

The 1st Canadian Division did not arrive in the First Army area until after the battle of the 9th/10th May. The 51st (Highland) Division had arrived on the 3rd May. It was attached to the Indian Corps, but remained in a back area around Busnes until the 14th May, when it was temporarily moved into the Second Army area as a G.H.Q. reserve. It returned to the First Army on the 18th May.

THE BATTLE OF AUBERS RIDGE.

The main attack on the 9th May was made by the 1st Division, the Meerut Division and the 8th Division, but, as already noted, it did not succeed and active fighting ceased on the following day. The number of casualties was great, as is shown below in the table of wounded admitted to the field ambulances of the First Army during the battle. They had all been evacuated by 9 a.m. on the 12th May, with the exception of 8 British and 3 Indian officers, and 194 British and 35 Indians of other ranks.

The weather during the attack on Aubers Ridge was bright and sunny, the wind being from the north-west and consequently unfavourable for the use of gas by the enemy.

The Medical Situation before the Attack.

Each of the three corps had a D.D.M.S. on its headquarters staff—Colonel S. Westcott with the Ist, Colonel W. W. Pike with the Indian, and Colonel J. Meek with the IVth Corps. They co-ordinated generally the medical services of the divisions.

The Casualty Clearing Stations.—The D.M.S. of the Army, Surg.-General W. G. Macpherson, had under his direct control eight casualty clearing stations distributed as follows :—

At Merville.—No. 6, 7 and 1st/2nd London.
At Lillers.—No. 4, 51st (Highland) and Lahore.
At Busnes.—Detachment of Lahore.
At St. Venant.—Lucknow.
At Chocques.—No. 1 and detachment of No. 1 Canadian.
At Aire (Fort Gassion).—No. 1 Canadian.

The Meerut C.C.S. at Aire was also at his disposal.

The casualty clearing stations were consequently in the same positions as during the battle of Neuve Chapelle, with two Territorial Force C.C.Ss. added. The accommodation had been considerably increased. The 2nd London C.C.S. had taken over the Salle des Fêtes and adjoining schools in Merville from No. 6 C.C.S. No. 51 C.C.S. was in camp in a field near the railway station at Lillers and capable of considerable expansion under canvas. No. 1 C.C.S. at Chocques had been expanded to accommodate 1,145 wounded at one time. The château and two schools, originally occupied by it, had accommodation for 245 only, but an adjoining straw shed, where wounded could lie in the open air, sheltered 250 more, and 650 were provided for in tentage pitched in the grounds of the château, a section of the 1st Canadian C.C.S. with the tentage of the unit having been sent from Aire.

Arrangements had been made with the D.G.M.S. for groups of medical officers and personnel to be sent up from the lines of communication to assist in the surgical work of the casualty clearing stations as required.

The Motor Ambulance Convoys.—The motor ambulance convoys, Nos. 2, 7 and 8, were also the same as during the battle of Neuve Chapelle, but an additional convoy, No. 6, arrived from the Second Army on the 10th May and was stationed at Aire. No. 2 had forty of its cars at Estaires and ten at Merville for the operations of the 9th May. No. 7 was at Chocques, with a section in Bethune. No. 8 had at first its headquarters section at Fort Gassion, Aire, with "B" section at St. Venant and "C" section at Lillers; but its headquarters section was moved to Lillers on the afternoon of the 9th May to make room for No. 6 in Fort Gassion. It had then five cars detached for duty with each of the Indian divisions.

The Canadian Mobile Laboratory had also been added to the First Army, and had opened in Merville.

Ambulance Barges.—Three barges of No. 2 Ambulance Flotilla were at the disposal of the D.M.S., two being sent to Bethune and one to Merville.

Preparations for Use of Supply Trains.—In the initial preparations for the battle equipment and personnel were held in readiness at Merville, Chocques and Lillers for converting empty supply trains into improvised ambulance trains in case of emergency.

Disposal of Convalescents.—In addition to the expansion of the accommodation in casualty clearing stations, and the return of all personnel lent to the Second Army during April for the battle of Ypres, the D.M.S. had arranged with the corps commanders to have billets ready to receive 100 convalescents from each casualty clearing station in order to avoid their being sent to the base; and also to post fifty convalescents from the divisional convalescent companies, which had been instituted after the battle of Neuve Chapelle, to each casualty clearing station for light duty during the battle. Four hundred convalescents were also cleared from the First Army medical units to the Convalescent Depôt (No. 4 Stationary Hospital) at Arques, near St. Omer. The D.M.S. was anxious to avoid loading the casualty clearing stations with minor ailments and laid special stress on the need of classification and of sending the slighter cases to the divisional convalescent companies.

Medical Preparations for the Battle.

On the 6th May the D.M.S. issued the following instructions for the medical services of the First Army:—

MEDICAL ARRANGEMENTS, FIRST ARMY.

(Operations No. 1).*

1. *Clearing Field Ambulances.*

Motor ambulance convoys will clear field ambulances as under:—

No. 2.—IVth Corps.
No. 7.—Ist Corps and British of Lahore and Meerut Divisions.
No. 8.—Indian Field Ambulances and Highland Division.

D.Ds.M.S. of Corps will be responsible for keeping Os.C. of motor ambulance convoys informed of positions of field ambulances.

II. *Entraining.*

The following medical officers and ambulance cars will be kept for entraining purposes:—

At Merville	..	No. 2 Convoy (1 M.O. and 10 cars).
At Chocques	..	No. 7 Convoy (1 M.O. and 10 cars).
At St. Venant	..	No. 8 Convoy (5 cars).
At Lillers	..	No. 8 Convoy (10 cars).

Medical officers at Lillers and St. Venant will be arranged for by Os. C., Lucknow Casualty Clearing Station and No. 4 Casualty Clearing Station, respectively.

Should entraining take place at La Gorgue and Bethune, the D.D.M.S. of the IVth Corps and the D.D.M.S. of the Ist Corps will arrange for medical officers for entraining duties and arrange for cars being available from divisional field ambulances.

Special arrangements will be made for entraining from Aire, or other places, as occasion demands.

III. *Stretchers.*

Whenever additional stretchers are required by field ambulances, a note will be sent by motor ambulance convoy cars proceeding to casualty clearing stations stating the number required; and the Os.C. casualty clearing stations concerned will be responsible for seeing that the stretchers are placed in the returning ambulance cars.

For this purpose, casualty clearing stations will maintain a reserve of stretchers, which will be obtained from ambulance trains or on application to the D.M.S. They will be drawn from train by convoy cars engaged in entraining and taken to the casualty clearing stations; a note being given by the O.C. casualty clearing station of the number required. Casualty clearing stations should maintain, if possible, a reserve of 100 stretchers in this manner.

IV. *Evacuation of Officers, Infectious Diseases and Convalescents suffering from Minor Ailments.*

Officers.—From the IVth Corps to No. 6 Casualty Clearing Station.

From the Ist Corps and British of the Indian Corps; severely wounded to No. 4 Field Ambulance (officers' section), Bethune, slighter cases to No. 4 Casualty Clearing Station.

Infectious Diseases.—From the IVth Corps to No. 7 Casualty Clearing Station.

From the Ist Corps and the British of the Indian Divisions to No. 4 Casualty Clearing Station.

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* These instructions are given in full, as they formed the basis on which instructions regarding medical arrangements for subsequent battles on the Western Front were framed.

Indians to the Lahore or Lucknow Casualty Clearing Station.

Convalescents.—Field ambulances will evacuate men suffering from minor ailments not requiring hospital treatment to convalescent companies in their divisions.

Casualty clearing stations will also arrange through the D.Ds.M.S. of Corps concerned to send similar cases to convalescent companies of corps or divisions.

V. *Evacuation of Men Unfit for Transport.*

(*a*) Men with wounds of lungs, head cases not requiring immediate operation, and severe fractures, will, as a rule, be taken direct to barges of No. 2 Ambulance Flotilla, instead of to casualty clearing stations. They should be sent direct from field ambulances of the IVth Corps to the barge at Merville or Estaires ; and from the Ist Corps and the British of Indian Divisions to barges at Bethune.

As the positions of the barges may, however, change from time to time, motor ambulance convoys will be informed where they are moored, and will act accordingly.

(*b*) Head cases requiring immediate operations and abdominal injuries should be retained in the field ambulances or casualty clearing stations until special arrangements are made for their evacuation.

(*c*) Moribund cases should not be evacuated from any unit.

VI. *Casualty Clearing Stations.*

(*a*) *In the IVth Corps Area.*—These will be filled in rotation. With the exception of those cases noted under IV. and V., all wounded will first be taken to No. 7 Casualty Clearing Station until it is filled ; then to No. 6, until it is filled ; and then to the London Casualty Clearing Station.

Similarly, No. 7 will be cleared to trains first, then No. 6 and then the London, and so on in rotation.

The cases noted under IV. will, however, be cleared whenever possible.

The D.D.M.S. of the IVth Corps will be responsible for directing evacuation to and from casualty clearing stations in this area, in accordance with these principles, but will modify them on his own initiative should circumstances demand, notifying any such modification to the D.M.S.

(*b*) *Indian Casualty Clearing Stations.*—The rotation for filling these will be Lucknow, Lahore, Lahore Section ; but as a rule, lying down cases should go to St. Venant or Lillers, and sitting-up cases to Busnes, because of facilities for rapid entraining at the two former places.

(*c*) *Other Casualty Clearing Stations.*—No. 1 Casualty Clearing Station will be filled first, then No. 4, but cases which it is undesirable to take to Lillers will be left at No. 1 Casualty Clearing Station.

VII. *Reports.*

In addition to the routine reports, A.Ds.M.S. of divisions and Os.C. casualty clearing stations, will wire the D.M.S., First Army, the number of wounded received since the previous wire and remaining at the following hours :—

6 a.m., noon, 9 p.m.

VIII. *Touring Cars.*

Touring cars will be placed at the disposal of the D.Ds.M.S. of Corps as under by motor ambulance convoys :—

No. 2.—D.D.M.S., IVth Corps.
No. 7.—D.D.M.S., Ist Corps.
No. 8.—D.D.M.S., Indian Corps.

IX. *Additional Personnel.*

(*a*) Additional personnel which may be required at field ambulances, casualty clearing stations and railheads, for unloading and loading ambulance cars and for light duties, will be obtained, as far as possible, from convalescent companies. Os.C. Casualty Clearing Stations will apply through the D.D.M.S. of the Corps in whose area they are situated for these.

(*b*) Additional personnel to assist stretcher bearers must, as far as possible, be arranged for by corps and divisions, in accordance with F.S.R., Part II. In this connection instructions of this day's date, issued by the D.A. and Q.M.G., First Army, to Corps are attached.

(*c*) Additional personnel for medical duties will be sent from time to time as required to casualty clearing stations on application to the D.M.S. The D.Ds.M.S. of Corps should make use of field ambulance personnel in reserve, as far as possible, to assist other field ambulances.

X. *Classification of Injuries for Transport and Disposal of Kit.*

Os.C. all medical units will pay particular attention to memoranda already issued on these points.

XI. *General Instructions.*

D.Ds.M.S., A.Ds.M.S. of Divisions, and Os.C. Medical Units under the D.M.S., First Army, will notify him by wire at the time of any occurrence of an unusual or important nature affecting medical services, and will inform him of any modification of, or addition to, the above arrangements which circumstances may render desirable.

Instructions by the D.A. and Q.M.G., First Army, issued with foregoing Operation Order.

*First Army, No. C.*133.

In the event of continuous heavy fighting, it may occur that the medical personnel is numerically inadequate to meet all calls that may be made upon them.

This is recognised, and to some extent legislated for by Section 90, para. 12, Field Service Regulations, Part II.

With a view, however, to minimizing the number of fighting men to be employed on this service, will you kindly give orders to your Divisional Commanders to endeavour to meet the demands of the A.Ds.M.S. of Divisions by making full use of all Class " B " men, convalescents, and other soldiers who would not be employed in the fighting line, before having recourse to fighting troops.

It is extremely improbable that any Lines of Communication troops will be available for these services, and it is useless considering the likelihood of their being provided.

The Work of the Medical Units during the Battle.

The position of the medical units on the 9th May is shown on the map.

Ist Corps.—The A.D.M.S. of the 1st Division, Colonel S. Macdonald, had his field ambulances distributed as follows :—

Advanced Dressing Stations—
Le Touret.—No. 2 Field Ambulance.
Junction of King George's and King's Roads.—No. 3 Field Ambulance.

Collecting Posts for Walking Wounded.
At advanced dressing stations.

Main Dressing Stations.
Ecole des Jeunes Filles, Bethune.—No. 2 Field Ambulance.
Ecole Paul Bert, Bethune.—No. 3 Field Ambulance.

In Reserve and for Sick.
Hinges.—No. 1 Field Ambulance.
Locon.—Bearer Division, No. 1 Field Ambulance.

The principal main dressing station was that of the Ecole des Jeunes Filles, where 1,000 could be received. The Ecole Paul Bert had only accommodation for 150. At each of the

advanced dressing stations there were 72 bearers with 18 stretchers, 4 motor ambulance cars and one ambulance wagon, a forage cart and water cart, and sufficient equipment and personnèl from a tent sub-division.

During the attack, which commenced at 5.40 a.m. on the 9th May, walking wounded came in a steady stream from 8 a.m. onwards. In the afternoon very little use was being made of the collecting post at Le Touret, and at 5.30 p.m. a large number of walking wounded were marched to it under a N.C.O. from the advanced dressing station of No. 3 Field Ambulance, on which the greatest pressure of work had fallen. The stretcher cases were being carried back to the latter, a distance of two miles, by hand. During the afternoon and evening the bearer division of No. 1 Field Ambulance in reserve was sent to assist in the front line and at the advanced dressing station of No. 3. The regimental aid posts of the 1st Division were clear of wounded by 8 a.m. on the 10th, when the 2nd Division took over the line. The bearers had worked continuously for 26 hours.

All the motor ambulance cars of the division, as well as three of the 47th Division, and the motor lorry of the divisional sanitary section, were employed in clearing the advanced dressing stations during the day, and eleven of the motor ambulance cars of the 2nd Division helped during the night of the 9th/10th May. The motor ambulance cars were permitted to go forward to "Windy Corner," south-east of Richebourg St. Vaast, after 3 o'clock in the afternoon, and after 6 o'clock to the regimental aid posts, but it was difficult for them to get through owing to the congestion of other traffic on the roads during the relief of the 1st Division by the 2nd Division.

The field ambulances of the 2nd Division were in Bethune, occupying the same buildings as they had occupied during and after the battle of Neuve Chapelle.

The field ambulances of the 47th Division were distributed as follows :—

Collecting Stations.
Beuvry.—No. 5 London Field Ambulance.
Le Touret.—No. 6 London Field Ambulance.
Near Gorre.—No. 6 London Field Ambulance.

Main Dressing Stations.
Ecole des Jeunes Filles, Bethune.—No. 5 London Field Ambulance.
Schools in Rue de Lille, Bethune.—No. 6 London Field Ambulance.

In Reserve.
Labeuvrière.—No. 4 London Field Ambulance.

No. 4 London Field Ambulance was under the orders of the A.D.M.S., 2nd Division, who instructed one section to open a

dressing station at Essars, while a bearer sub-division was attached to the 5th London Infantry Brigade and moved to Le Casan, east of Locon. The remainder of the field ambulance remained at Labeuvrière.

All the field ambulances of the divisions of the Ist Corps received wounded of the 1st Division on the 9th and 10th May, and all their ambulance transport was employed in clearing the advanced dressing stations.

Wounded were cleared from the Ist Corps field ambulances to the casualty clearing stations at Chocques and Lillers by No. 7 M.A.C. The numbers cleared by this convoy were:—

On 9th May	1,812
,, 10th May	1,029
,, 11th May	249
,, 12th May	77

A total of 3,167, exclusive of sick.

Indian Corps: The medical arrangements in the Indian Corps were as follows:—

Advanced Dressing Stations.
St. Vaast.—Meerut Division Field Ambulances.
Richebourg St. Vaast Road. (1,000 yards north of Pont Logy).—Lahore Division Field Ambulances.

Main Dressing Stations.
Vieille Chapelle.—British Field Ambulances, Meerut Division.
Zelobes.—Indian Field Ambulances, Meerut Division.

In Reserve and for Sick.
British and Indian Field Ambulances, Lahore Division, and No. 128 Indian Field Ambulance, Meerut Division, at Paradis.

The field ambulances of the Lahore Division were also employed for receiving wounded of the Meerut Division. No. 7 and No. 8 British Field Ambulances of the Lahore Division had moved, the former to billets near L'Epinette, on the road to Croix Marmuse, and the latter to a farm at the junction of the Rue du Ponch with Queen Mary's Road, north-east of Fosse, where it opened under canvas. No. 111 Indian Field Ambulance was at L'Epinette, No. 112 at Croix Marmuse and No. 113 at Paradis during the battle.

The Meerut Division advanced dressing station, near St. Vaast, was at the starting point of a tramway line which had been constructed to bring supplies to the trenches and which was used for bringing the wounded back. It was formed by the bearer division of No. 128 Indian Field Ambulance with the bearer divisions of No. 20 British Field Ambulance and No. 129 Indian Field Ambulance, under Major Kerans, I.M.S. The advanced dressing station of the Lahore Division, under Major Melluish, I.M.S., was about

300 yards west of the Estaires–La Bassée Road, on the road leading to Richebourg St. Vaast, and about 1,000 yards north of Pont Logy. It was formed by the bearer divisions of No. 8 British Field Ambulance and No. 112 Indian Field Ambulance.

Ten motor ambulance cars were allotted to the advanced dressing station of the Meerut Division and twelve to that of the Lahore Division. Most of the work fell on Major Kerans' unit, which collected over 2,000 wounded during the 36 hours fighting.

The field ambulances for Indians were cleared by No. 8 M.A.C. to St. Venant, Busnes and Lillers, and the British of the Indian Divisions by No. 7 M.A.C. to Chocques and Lillers.

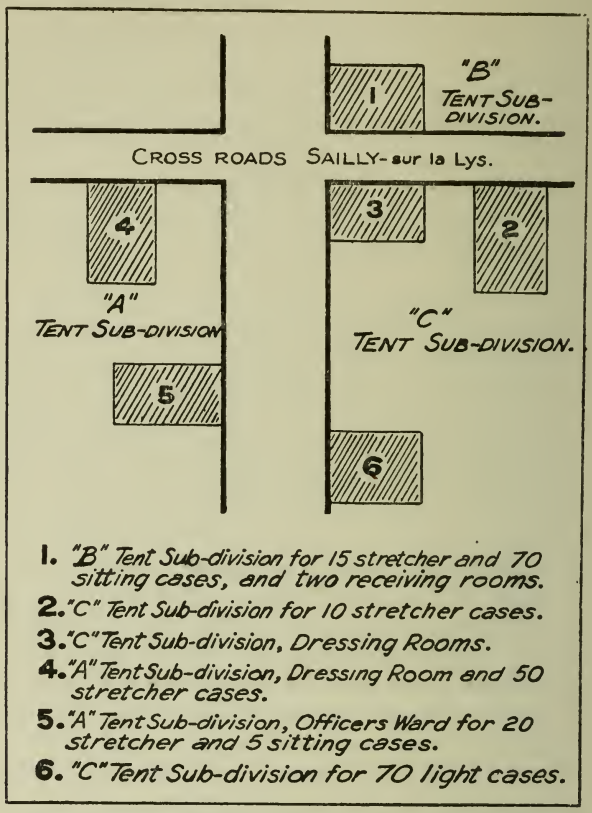
IVth Corps.—The 8th Division medical services were under the direction of Colonel L. T. Nash. The field ambulances had only scanty accommodation along the Estaires–Armentières road. No. 24 had its tent division in various small buildings and schools in Sailly-sur-la-Lys ; but it was well organized by its commanding officer, Lieut.-Colonel R. Pickard, at the cross-roads in the village, with accommodation for 145 sitting and 95 stretcher cases, as shown in the plan on next page.

No. 25 Field Ambulance was in a factory at Sailly, where it had been employed in running divisional baths. It prepared accommodation in the building and shelters for about 350 wounded, and obtained French civilians to assist in loading and unloading the ambulance cars. The headquarters section of No. 2 M.A.C. was parked at this factory during the operations.

No. 26 Field Ambulance, which had been at Bac St. Maur in April but was moved to Estaires at the end of the month, received orders on the 7th May to open a main dressing station for 150 in a school and church in Nouveau Mond, between Estaires and Sailly. It returned to Estaires on the 11th May.

An advanced dressing station was opened by each of the field ambulances of the 8th Division, by No. 26 on the Sailly-Fromelles road, about a quarter of a mile south of where it crosses the Rouge Croix–Fleurbaix road ; by No. 25 about one mile south of Fleurbaix in the Rue des Lombards ; and by No. 24 between these two on the Pont Logy–Fleurbaix road. Each advanced dressing station was staffed by a tent sub-division, and the bearer division of the field ambulance. Walking wounded were directed to two divisional collecting stations, one near Rouge de Bout, on the Sailly–Fromelles road, and the other at Barlette Farm 1,500 yards west of Fleurbaix. During the forenoon of the 9th May the advanced dressing station of

No. 25 Field Ambulance was moved forward half a mile farther south and later in the day that of No. 24 the same distance to Le Trou on the Rue Petillon.


"B"
TENT SUB-DIVISION.
1
CROSS ROADS SAILLY-sur la Lys.
4
"A"
TENT SUB-DIVISION
5
3
2
"C"
TENT SUB-DIVISION.
6
1. "B" Tent Sub-division for 15 stretcher and 70 sitting cases, and two receiving rooms.
2. "C" Tent Sub-division for 10 stretcher cases.
3. "C" Tent Sub-division, Dressing Rooms.
4. "A" Tent Sub-division, Dressing Room and 50 stretcher cases.
5. "A" Tent Sub-division, Officers Ward for 20 stretcher and 5 sitting cases.
6. "C" Tent Sub-division for 70 light cases.

Main Dressing Station of No. 24 F.A., 8th Division, May 1915.

By the morning of the 12th May, 95 officers and 2,534 other ranks had been admitted to the field ambulances of the 8th Division. In addition 442 wounded were collected by field ambulances of the 49th (West Riding) Division on its left and 53 by the 7th Division on the right, making a total of 3,124, of whom all belonged to the 8th Division, except 59 of the 7th Division and 6 Germans.

By an error in a message from divisional headquarters six medical officers were sent on the 10th May from the field ambulances of the 8th Division to assist the regimental officers in the line. They were not required, but the A.D.M.S. of the

8th Division asked the D.D.M.S. of the IVth Corps to have them replaced by other officers. Three medical officers were consequently sent from the 49th (West Riding) Division field ambulances and a bearer sub-division from the 7th Division to the 8th Division. After dark on the 10th the trenches were searched for wounded by fifty men of the 25th Brigade and two bearer sub-divisions of the 49th Division in conjunction with the 8th Division bearers, and by 9 a.m. on the 11th all who could be found had been collected.

By the morning of the 12th May the 8th Division field ambulances had resumed the positions they occupied previous to the battle. All personnel lent to them had returned to their own division and the headquarters section of No. 2 M.A.C went back to Merville.

The field ambulances of the 49th Division were in Estaires during April and May, but No. 1 West Riding Field Ambulance was moved for the battle to Bac St. Maur and Fleurbaix, where it took over divisional baths from the 8th Division. No. 2 and No. 3 West Riding Field Ambulances remained in Estaires during the battle and were placed under the orders of the 7th Division. Advanced dressing stations were opened by No. 1 West Riding Field Ambulance at Bois Grenier and to the south-west of that village in touch with the 8th Division. Divisional collecting posts were formed by it and by bearers of No. 2 West Riding Field Ambulance in the neighbourhood of Fleurbaix, where the ambulance transport was parked. The division was not seriously engaged, but many of the walking wounded of the 8th Division found their way to its advanced dressing stations and main dressing stations.

The 7th Division field ambulances were in Estaires, but beyond sending ambulance transport and bearers to help the 8th Division did not take an active part in the battle of the 9th May.

Evacuation of Casualties during the attack on Aubers Ridge.

During the period 9th to 12th May the casualty clearing stations worked smoothly, and they were kept clear by ambulance trains without difficulty or confusion. Thirty ambulance cars of No. 1 M.A.C. were sent from G.H.Q. to Chocques on the 10th May to take slight cases to St. Omer, and No. 6 M.A.C. from Aire also assisted in evacuating the lighter cases by road to the Canadian C.C.S. at Fort Gassion. The three barges of No. 2 Ambulance Flotilla were also employed. Two left Bethune and one Estaires on the 10th May for St. Omer, filled chiefly with men wounded in the head, chest and lower extremity.

As already noted, arrangements had previously been made by the D.M.S. to store the equipment and have personnel earmarked at Chocques, Lillers and Merville, to prepare twenty covered vans in each of the supply trains returning empty from these railheads for the transport of the lighter cases of wounded in case of emergency. Sanction had been given for testing this arrangement, and on the 10th May one supply train was prepared at each of these places. Each van was rapidly prepared and equipped for the transport of ten slightly wounded lying on palliasses, and in this manner 600 of the less severely wounded were sent to the base in comparative comfort. A medical officer, with one N.C.O. and four men of the R.A.M.C. and an orderly for each of the twenty vans went on each train from railheads. The personnel returned with the equipment to their units when the supply trains came back to railheads on the 13th May. The D.M.S., L. of C., was asked to inspect the trains as they passed through Abbeville, and he reported that this method of using empty supply trains was successful and comfortable.

Casualties during the attack on Aubers Ridge.

The number of wounded admitted to field ambulances and casualty clearing stations from the 9th to 12th May, and the number remaining on the latter date, as shown in the following tables, indicate the rapidity with which evacuation of the wounded to the base hospitals took place during these operations.

Wounded Admitted into Field Ambulances.
(For each 24 hours—9 a.m. to 9 a.m.)

Divisional Field Ambulances.	9th/10th.		10th/11th.		11th/12th.		Total.	
	Offrs.	O.R.	Offrs.	O.R.	Offrs.	O.R.	Offrs.	O.R.
1st Division ..	30	1,455	1	37	—	8	31	1,500
2nd Division ..	—	471	—	143	—	32	—	646
47th (2nd London) Division ..	113	487	6	49	1	32	120	568
7th Division ..	1	6	—	—	—	—	1	6
8th Division ..	79	1,901	10	401	1	67	90	2,369
49th (W. Riding) Division ..	1	26	—	44	—	8	1	78
Meerut Division :								
British ..	27	695	3	65	—	14	30	774
Indians ..	21	951	1	58	2	28	24	1,037
Lahore Division :								
British ..	5	31	5	17	—	5	10	53
Indians ..	1	54	1	34	—	5	2	93
Total—British ..	256	5,072	25	756	2	166	283	5,931
Indians ..	22	1,005	2	92	2	33	26	1,940

Note.—The admissions to field ambulances of the 2nd and 47th (2nd London) Divisions were chiefly wounded of the 1st Division. About 100 wounded in addition to those shown in the table were admitted between 6 a.m. and 9 a.m. of the 9th instant.

Wounded Admitted from Field Ambulances to Casualty Clearing Stations.
(For each 24 hours—Noon to noon.)

Casualty Clearing Station.	9th/10th.	10th/11th.	11th/12th.	Total.
No. 1	1,780	256	89	2,125
No. 4	656	107	53	816
No. 6	831	154	4	989
No. 7	872	176	—	1,048
1st/2nd London	772	128	16	916
Lucknow*	483	85	9	577
Lahore*	342	10	5	357
Lahore Section*	329	—	—	329
Barges	102	—	—	102
Total—British	5,013	821	162	5,996
Indians	1,154	95	14	1,263

Note.—236 wounded were transferred from other casualty clearing stations to the Canadian C.C.S.

Wounded Remaining in Divisional Field Ambulances and Casualty Clearing Stations at 9 a.m. on 12th May, 1915.

Divisional Field Ambulances.	Officers.	Other Ranks
1st Division	—	5
2nd Division	—	46
47th (2nd London) Division	7	68
7th Division	—	—
8th Division	1	58
49th (West Riding) Division	—	9
Lahore Division—British	—	2
Indians	1	11
Meerut Division—British	—	6
Indians	2	24
Total—British	8	194
Indians	3	35

Casualty Clearing Stations.	Officers.	Other Ranks.
No. 1	—	71
No. 4	3	102
No. 6	6	25
No. 7	—	21
Lahore*	2	93
Lucknow*	1	56
Canadian	—	63
1st/2nd London	—	32
Total—British	9	314
Indians	3	149

* Indians.

Grand Totals.

British officers	17
British, other ranks	508
Indian officers	6
Indian, other ranks	184
	715

THE BATTLE OF FESTUBERT.

The medical arrangements for the battle of Festubert, which commenced three days later, were practically the same as for the battle of Aubers Ridge; but the military operations were confined to the area between Neuve Chapelle and the La Bassée Canal, and were more prolonged.

Medical Preparations for the Battle.

The D.M.S. of the First Army issued operation instructions on the 13th May modifying his arrangements for the battle of Aubers Ridge with a view to diverting sick and wounded from divisions not actively engaged to the casualty clearing stations on the northern section of the First Army area. No. 2 M.A.C. was ordered to clear the British of the Indian Divisions to Merville instead of No. 7 clearing them to Lillers and Chocques; and No. 8 M.A.C. in clearing the Indian field ambulances was ordered to follow the routes leading to St. Venant and thence to Busnes and Lillers, in order to keep the southern roads clear. The evacuation of casualty clearing stations and entraining at the railway stations at Chocques, Lillers and St. Venant were placed under the direction of the officers commanding No. 1, No. 4 and the Lucknow C.C.Ss. respectively, while the D.D.M.S. of the IVth Corps continued to exercise the same function at Merville. The D.D.M.S. of the Ist Corps was to organize the evacuation from Bethune should ambulance trains come there. No. 51 (Highland) C.C.S. was open under canvas at Lillers and was to be filled in rotation with No. 1 and No. 4.

Colonel Cuthbert Wallace joined the D.M.S. staff on the 13th May as consulting surgeon and was given a free hand to supervise the surgical work in the casualty clearing stations.

On the eve of the battle all the casualty clearing stations were practically empty and had considerable accommodation. The barges of the ambulance flotilla were again waiting at Merville and at Bethune.

Outline of the Operations.

Between the night of the 15th/16th May and the 19th May the battle was fought by the 7th and the 2nd Divisions. The Indian Corps on the left of the 2nd Division also advanced to the attack on the night of the 15th/16th May, but was unable to make progress. It was then ordered to suspend its attack and form a defensive flank. On the 16th May the 7th Division was ordered to attack in the direction of Rue d'Ouvert, Château St. Roch and Canteleux, and the 2nd Division in the direction of Rue du Marais and Violaines. Both divisions, after constant fighting and capturing ground to a depth of some 600 yards, were withdrawn to rest on the 19th May, and their place in the line was taken by the 1st Canadian Division on the right, the 51st (Highland) Division on the left. These two divisions fought as a separate command under Lieut.-General E. A. H. Alderson until the 22nd May, when the Highland Division was attached to the Indian Corps, and the Canadian Division to the Ist Corps. Active operations were eventually suspended on the 25th May.

The work of the Medical Services.

The chief feature in the collection of the wounded during the battle of Festubert was the concentration of most of the field ambulances of the Ist Corps in the town of Bethune, and the collection of the wounded to that place.

The country directly behind the fighting line was destitute of villages of any size, and accommodation in buildings suitable as main dressing stations was unobtainable. An effort was made to establish a large dressing station in the grounds of the Château at Hinges for the 2nd Division, and the D.M.S. sent forty hospital marquees there for that purpose on the 14th May ; but permission to pitch them at Hinges was refused as they were likely to attract the fire of the enemy's artillery. With the exception, therefore, of such accommodation as could be obtained in Locon by No. 5 Field Ambulance, the other field ambulances of the 2nd Division were in Bethune. The 7th, 47th and 1st Divisions had also two of their field ambulances in Bethune. No. 21 Field Ambulance of the 7th Division was at Essars, a small village near the Bethune end of the Rue du Bois. It was open for the sick of the division. One field

ambulance of the 47th Division (the 4th London) was at Labeuvrière, and No. 1 Field Ambulance of the 1st Division at the Prieuré St. Pry, about one and a half miles south of Bethune.

There were thus six field ambulances in Bethune for the wounded of the Ist Corps, and under the direction of the D.D.M.S. of the corps they were all instructed to receive wounded, without regard to the division from which they came. Altogether there was accommodation in Bethune for more than 4,000 wounded, and, in addition, buildings were earmarked in the town, under instructions of the D.M.S., for some 5,000 more in case of emergency.

The advanced dressing stations of the 2nd Division were at Richebourg St. Vaast, Le Touret and Lacouture; those of the 7th Division were on the Rue du Bois, due south of Richebourg St. Vaast, and on the northern section of the road from the Rue du Bois to Festubert.

When the 51st and 1st Canadian Divisions took over the line from the 2nd and 7th Divisions the headquarters of the field ambulances of the latter two divisions remained where they were in Bethune; the field ambulances of the 51st Division went to La Gorgue, Lestrem and Vieille Chapelle, and those of the Canadian Division to Hinges. The latter took over the advanced dressing stations of the 7th Division, but the 2nd Division advanced dressing stations remained open to assist the 51st Division field ambulances, which were having their first experience of battle.

On the 20th May the enemy commenced to shell Bethune and continued shelling it intermittently during the following days. Fortunately the greatest pressure of work in the field ambulances had come to an end by that time. The shelling on the 20th was mainly against the east suburb of the town, where No. 6 (London) Field Ambulance was established. It was moved to the west; but at 7 o'clock on the following evening the enemy's artillery fire reached all parts of the town. The wounded fit for transport were rapidly removed to the casualty clearing stations in Lillers and Chocques, and by midnight only a few remained in Bethune, where No. 2 Field Ambulance of the 1st Division and No. 6 (London) of the 47th Division remained open, the former in the Ecole Jules Ferry, south of the town, and the latter in the Ecole Maternelle, on the west. All the other field ambulances were moved to villages to the west and south-west of Bethune.

Weather.

The weather during the battle of Festubert was wet, rain falling almost daily throughout the operations. It cleared up and was fine and warm from the afternoon of the 22nd May. No gas offensive took place.

Casualties.

The number of wounded received into the main dressing stations of the field ambulances and to the casualty clearing stations of the First Army between the 15th and 19th May are shown in the following tables. They do not indicate the number of casualties in each division, as the majority of the wounded were taken to the field ambulances in Bethune irrespective of the division to which they belonged, as already stated. Wounded officers went to the officers' section of No. 4 Field Ambulance of the 2nd Division.

Wounded Admitted into Field Ambulances.

(For each 24 hours—9 a.m. to 9 a.m.)

Divisional Field Ambulances.	15th/16th.		16th/17th.		17th/18th.		18th/19th.	
	Offrs.	O.R.	Offrs.	O.R.	Offrs.	O.R.	Offrs.	O.R.
1st Division ..	2	145	—	855	—	143	—	124
2nd Division ..	21	59	117	1,300	49	602	45	471
7th Division ..	—	161	—	712	—	201	—	54
47th (London) Division ..	—	57	6	655	1	458	1	581
8th Division ..	2	9	1	16	—	18	—	11
49th (W. Riding) Division ..	—	13	—	9	—	5	—	3
Meerut Division—								
British ..	8	104	2	90	1	14	1	21
Indians ..	2	235	—	59	4	93	—	95
Lahore Division—								
British ..	—	15	—	40	—	24	1	20
Indians ..	—	7	—	21	—	5	—	14
Total—British ..	33	563	126	3,677	51	1,465	48	1,285
Indians	2	242	—	80	4	98	—	109

Total Admissions, 9 a.m., 15th May, to 9 a.m., 19th May, 1915 :—

British officers	258	Other ranks (British) ..	6,990
Indian officers	6	Other ranks (Indian) ..	529
Total—officers ..	264	Other ranks ..	7,519

Wounded Admitted from Field Ambulances to Casualty Clearing Stations.
(For each 24 hours—Noon to noon.)

Casualty Clearing Station.	15th/16th.	16th/17th.	17th/18th.	18th/19th.
No. 1	376	1,559	39	640
No. 4	40	676	68	512
No. 6	36	1	423	155
No. 7	56	168	337	288
Lahore*	—	—	1	—
Lucknow*	285	164	101	22
1st/2nd London	22	4	371	1
No. 1 Canadian	—	†190	—	—
No. 51 (Highland) ..	1	323	—	—
Total—British	531	2,731	1,238	1,596
Indians	285	164	102	22

Total Admissions (Battle of Festubert).

British	6,096
Indians	573
Total	6,669

Evacuation to the Base.

Casualty clearing stations were kept clear by a succession of ambulance trains running to Chocques, Lillers, Merville and St. Venant. The number of ambulance trains available had been increased from twelve to fourteen since the battle of Neuve Chapelle. Their movements were directed by the A.D.R.T. of the Southern Line at Bethune, to whom the D.M.S. of the First Army communicated his requirements day by day. No. 6 M.A.C. was also employed in clearing by road slightly wounded to St. Omer and Indian slightly wounded to the Indian Convalescent Depôt and Meerut C.C.S. at Aire, and thirty-eight cars of No. 1 M.A.C. came up from G.H.Q. on the 16th May and cleared a large number to St. Omer from No. 4 and the Highland casualty clearing station at Lillers. It was not necessary, therefore, to employ empty supply trains, but an improvised ambulance train of passenger coaches was sent to Bethune on the 17th May and evacuated direct from the field ambulances 615 slight cases, including six officers, sitting-up, thus relieving to a great extent the pressure on the casualty clearing stations in the southern area of the First Army.

*Indians.

† These were transferred from other casualty clearing stations and are not included in the total of admissions.

To relieve these casualty clearing stations still further the D.M.S. ordered No. 7 M.A.C., reinforced by ten cars of No. 8 M.A.C. to clear slight cases of wounds from the Bethune field ambulances to casualty clearing stations in Merville. Unfortunately, some of the field ambulance commanders failed to classify the wounded as they were loaded into the ambulance cars, and many severe cases were unnecessarily transferred to Merville. The importance of classifying the wounded had been impressed upon the field ambulances before the battle in view of its being necessary to discriminate between those going to barges, to casualty clearing stations, or to improvised trains, but some officers misunderstood the instructions, when the order came to transfer slight cases to Merville, under the impression that the officer commanding the M.A.C. would discriminate between the slight and the severe. The misunderstanding was cleared up after the departure of the first convoy. Classification of wounded for the barges was also unsatisfactory at times, several moribund cases being sent to them at Bethune, and several slight cases to the barge at Merville, contrary to the instructions of the 6th May (*see* p. 428).

With these exceptions the medical services during the battle of Festubert dealt with the large numbers of wounded smoothly and successfully. Many casualties occurred amongst the officers and men of the R.A.M.C. The bearers, especially those of the 7th and 2nd Divisions, were severely tried. Several divisions had already wheeled stretcher carriers with them to relieve the work of the bearers, but fifty more were urgently demanded from G.H.Q., and a sufficient number arrived on the 21st May to enable the D.M.S. to distribute fourteen to each corps.

Lessons of the Battles.

It will be remembered that during and after the battle of Neuve Chapelle attention had been directed to measures which would result in greater efficiency in the medical services during battle. Many of these had been adopted at the time of the operations in May. Convalescent companies had been formed in divisions and corps in order to avoid congesting field ambulances and casualty clearing stations with slighter cases of sickness, and they became depôts from which, during battle, assistance in loading and unloading ambulance transport at the casualty clearing stations was obtained. The work of the field ambulance stretcher bearers was made easier by the use of the wheeled stretcher carriers, and, for the first time, by

the use of a trolley line which had been constructed from the trenches to the advanced dressing stations in the Indian Corps area. Transport of certain classes of severe injury (such as head, chest, and fractured thigh cases) by ambulance barges on the canals had been instituted. The old specification tally was abolished, and a field medical card in a waterproof envelope took its place.

Much difficulty had been experienced with regard to the custody of officers' kits and valuables and the personal property of men admitted to the medical units. Bags for valuables were provided by voluntary effort, organized by Lady Smith-Dorrien, and were being distributed in large numbers to the medical units at the front, but the labour of making inventories of officers' kits was great. This threw a special strain and responsibility on the quartermasters of the casualty clearing stations, and it was not always possible to make complete inventories when the number of wounded was great.

The ambulance transport both by road and by rail proved sufficient for the rapid clearing of field ambulances and casualty clearing stations. Systematic methods of collection and evacuation in definite zones of work and along definite routes contributed essentially to success in this direction. The arrangements for automatically restoring stretchers to the bearer divisions of the field ambulances from the casualty clearing stations and to the casualty clearing stations from the ambulance trains had good results, and there were practically no complaints during the battle of Festubert of a deficiency in stretchers at any time. The number of ambulance trains had increased, and the number of wounded at any one time was not sufficiently great to necessitate improvised trains being employed except on one or two occasions, but the experiment with empty supply trains, although they were not subsequently required, proved the value of their use when adequate arrangements had been made beforehand for staffing and equipping them at railheads immediately after the supplies had been unloaded. From a supply point of view it was essential that there should be no delay in returning them to the base, and, from a medical point of view, it was necessary to prepare them in such a way as to ensure the care and comfort of the patients.

But one of the most important developments was the appointment of a consulting surgeon to army headquarters. Through his influence the organization of surgical work in the casualty clearing stations gradually led to surgical operations being undertaken more immediately on such cases as wounds of the abdomen

and to special arrangements being made for the reception of severe cases into the more advanced of the casualty clearing stations as soon as possible after the wound had been inflicted. At most of the casualty clearing stations there were surgeons of great skill and ability, and under Colonel Wallace's supervision the advance in surgical work was rapid and continuous. This led to the equipment of these units being increased to include a proportion of hospital beds in each, similar to those in general hospitals at the base, and to important additions being made to the operating rooms of casualty clearing stations. Much of the additional comfort of the casualty clearing stations in this respect was also due to gifts from the depôts of the British Red Cross Society and Order of St. John in France, whose commissioners and agents were constantly in touch with officers commanding medical units and ready to supply them with whatever articles they required for adding to the comfort of their patients.

CHAPTER XX.

THE BATTLE OF LOOS.

SUBSEQUENT to the battles of Festubert and Ypres in 1915, the First and Second Armies were more or less continuously engaged in trench warfare until the 9th August, when there was a period of comparative quiet along the whole of the British line of trenches. On the 2nd June attacks were made on the 3rd Cavalry and 1st Indian Cavalry Divisions, then holding the trenches in front of Hooge.

The 1st Canadian Division, which had taken up the trenches in front of Givenchy after the battle of Festubert, made a successful attack on the enemy's line on the 15th and 16th June, and although the Canadian troops obtained possession of his trenches they were unable to retain them, owing to their flanks being exposed. At the same time the Vth Corps also successfully attacked the enemy's front line at Bellewaarde Lake, in the Ypres Salient, and consolidated some of the ground won.

Similar attacks were made on the 6th July by the 11th Brigade, 4th Division, in the Salient between Boesinghe and Ypres.

Between the 19th July and 9th August attacks and counter-attacks were again made in the vicinity of Hooge, during one of which, on the 30th July, the enemy used "*Flammenwerfer*" for the first time, a strong jet of burning liquid being projected into the British trenches, some of which were lost owing to the surprise and confusion which this new form of attack had caused more than to the damage inflicted. The trenches were regained by the 6th Division on the 9th August.

On the 25th September the battle of Loos was commenced and lasted till the 8th October. On the 25th September, in addition to the main attack, active operations were carried out in support of it along the whole front, but more particularly by the Vth Corps of the Second Army at Bellewaarde, by the 2nd Division of the Ist Corps at Givenchy, by the Indian Corps on Moulin du Pietre, and by the IIIrd Corps in front of Bois Grenier.

The battle was followed by a determined counter-attack by the enemy on the afternoon of the 13th October, and severe fighting was continued till the 19th October along the whole

line, but more especially at the Hohenzollern Redoubt, in front of the coal mine (Fosse 8 de Bethune), south of Auchy-lez-La Bassée.

Medical Situation Previous to the Battle.

The minor actions during the summer of 1915 did not present any special problems for the medical services. The control of ambulance trains had been greatly simplified by the appointment of an A.D.R.T. to a northern and southern line of evacuation, with whom the D.M.S. of each army was in direct communication and who was responsible for bringing ambulance trains to the localities indicated to him by the D.M.S. The general policy was to allot a definite number of ambulance trains to the northern or Second Army area, and a similar number to the southern or First Army area. The former were normally based on Boulogne and Etaples, and the latter on Rouen and Havre. It was only when a decision had to be made regarding the use of trains allotted to one army being required for another that reference to G.H.Q. was required.*

At the end of July the Third Army had been formed, and took over the French part of the line on the Somme in the area east of Amiens. It was composed in the first instance of the 48th and 51st Divisions from the First Army, and the 4th and 5th Divisions from the Second Army, together with a new army division—the 18th—and the Indian Cavalry Corps. Consequent on its formation, certain changes had been made in the administration and medical units of the First and Second Armies. Surg.-General F. Treherne became its D.M.S., Colonel W. W. Pike, who had been D.D.M.S. of the Indian Cavalry Corps, succeeding him as D.D.M.S. of the Indian Corps. Colonel Hunter was then appointed D.D.M.S. of the Indian Cavalry Corps.

Three casualty clearing stations, No. 4, No. 51 (Highland) and the Lucknow; No. 6 Motor Ambulance Convoy, and the Meerut Advanced Depôt of Medical Stores were transferred to the Third Army from the First Army; No. 5 C.C.S., the South Midland C.C.S. and No. 3 M.A.C. from the Second Army, and No. 1 M.A.C. temporarily from G.H.Q. Other additions were made subsequently to the Third Army, but chiefly by new army formations from the United Kingdom. The area occupied by it was a comparatively quiet area, and the army took no active part in the battles of 1915.

New army divisions had also been added to the First and Second Armies before the battle of Loos. The 9th Division

*See Chapter II.

joined the Second Army in May and was transferred to the First Army in June. The 14th, 12th, 8th and 17th Divisions also joined the Second Army during May, June and July; the 15th, 19th and 20th joined the First Army during July, and the 23rd early in September.

Several new corps had also been formed previous to the battle, the VIth Corps in June, the VIIth and Xth in July, the XIth, XIIth and Canadian in September. The VIIIth and IXth Corps formed part of the Mediterranean Expeditionary Force on the Gallipoli Peninsula.

The effect on the medical services of these new formations was that during 1915 officers of the regular R.A.M.C. had been gradually withdrawn from the British Expeditionary Force in France in order to take up the command and training of new field ambulances and casualty clearing stations, as well as for administrative medical duties and the charge of the new hospitals allotted to the lines of communication. These involved numerous changes in commands of medical units and administrative medical appointments in the divisions already in France.

Outline of the Operations.

The area over which the battle of Loos was fought extended from the La Bassée Canal southwards to Grenay, the French Tenth Army attacking simultaneously from the Vimy ridge. Previous to the attack the British line of trenches in the area of the battle ran from east of Grenay and Maroc Fosse No. 7, east of Vermelles and Cuinchy, northwards to Givenchy. It was held by the IVth Corps from in front of Grenay to the Vermelles–Hulluch road and by the Ist Corps from the latter point to the north of the canal at Givenchy.

The IVth Corps, commanded by Lieut.-General Sir H. Rawlinson, with Colonel J. Meek as his D.D.M.S., was composed at the time from right to left of the 47th, 15th and 1st Divisions, and the Ist Corps, under Lieut.-General Sir H. Gough, with Colonel S. Westcott as D.D.M.S., of the 7th, 9th and 2nd Divisions. Two brigades of the 3rd Cavalry Division, which had been in Army Reserve until the afternoon of the 26th September, were afterwards attached to the IVth Corps to assist in holding Loos Village until the end of September.

The Indian Corps (D.D.M.S., Colonel W. W. Pike) held the line of trenches in front of the Estaires–Bethune road, with the 19th Division, Lahore and Meerut Divisions.

The IIIrd Corps (D.D.M.S., Colonel B. M. Skinner) had been placed under the G.O.C. of the First Army and occupied the trenches in front of the Estaires–Armentières road, on the left of the First Army, with the 20th, 8th and 23rd Divisions.

The XIth Corps, under Lieut.-General R. C. B. Haking, with Colonel R. H. Firth as D.D.M.S., was in general reserve, and was composed of the 21st, 24th and Guards Divisions. The 21st was moving up between Lapugnoy and Nœux-les-Mines; the 24th between Marles-les-Mines and Beuvry. The Guards Division was concentrated behind them in the neighbourhood of Lozinghem and Lillers.

On the 25th September the actions at Pietre by the 19th, Meerut and 20th Divisions, and at Bois Grenier by the 8th and 23rd Divisions, led to no material alteration in the original line. The 5th Brigade of the 2nd Division made a containing attack north of the La Bassée Canal at Givenchy and Cuinchy, without breaking through the enemy's line of trenches, in front of La Bassée. The other brigades of the Division took part in the assault south of the canal.

The attacks south of the Bethune–La Bassée road by the 47th, 15th, 1st, 7th and 9th Divisions were successful, except on the extreme left, where a brigade of the 9th Division was held up east of the La Bassée–Vermelles railway. The 47th Division on the extreme right broke through to the double crassier south-west of Loos and formed a protective flank. The 15th Division on its left went through Loos on to Hill 70, on the La Bassée–Lens road, about one mile east of the town. Troops of the 1st Division reached the La Bassée–Lens road and woods north of Hill 70 to the vicinity of Hulluch but did not reach the village. The 7th Division reached the quarries and the vicinity of the Cité St. Elie, on the La Bassée–Lens road, while the 9th Division swept through the formidable Hohenzollern Redoubt in front of the slag heap of Fosse No. 8 and reached the neighbourhood of the village of Haisnes, north-east of the Fosse.

On the 26th September and subsequent days there was confused fighting against strong counter-attacks. The 21st Division was thrown in to carry on the attacks of the 15th Division, and the 24th those of the 1st Division south of the Vermelles–Hulluch road, with one brigade sent to the 9th Division. The Guards Division came up to Vermelles, and went forward the following day, when the 15th, 21st and the 24th Divisions, less the brigade with the 9th Division were withdrawn.

The result of the fighting between the 26th and 28th September was that the British front line had to be consolidated on a front further back than the troops had reached in their initial success. The new line ran east of Loos on the west slope of Hill 70, northwards along the Lens–La Bassée road to the south-west of Hulluch, when it bent back west of the quarries to the Hohenzollern redoubt and thence to the original line of trenches.

The 9th Division was withdrawn from the First Army on the 30th September, the 28th Division, which came into the Ist Corps area on the 26th September, taking its place.

The XIth Corps relieved divisions of the Ist Corps at the beginning of October, the Ist Corps front being temporarily confined to the trenches immediately to the north and south of the La Bassée Canal on the 5th October.

The 12th and 46th Divisions were attached to the XIth Corps on the 30th September and 3rd October respectively, replacing the 21st and 24th Divisions, which were withdrawn from the First Army on the 29th September. The British line was then shortened by the French extending their front to the village of Loos.

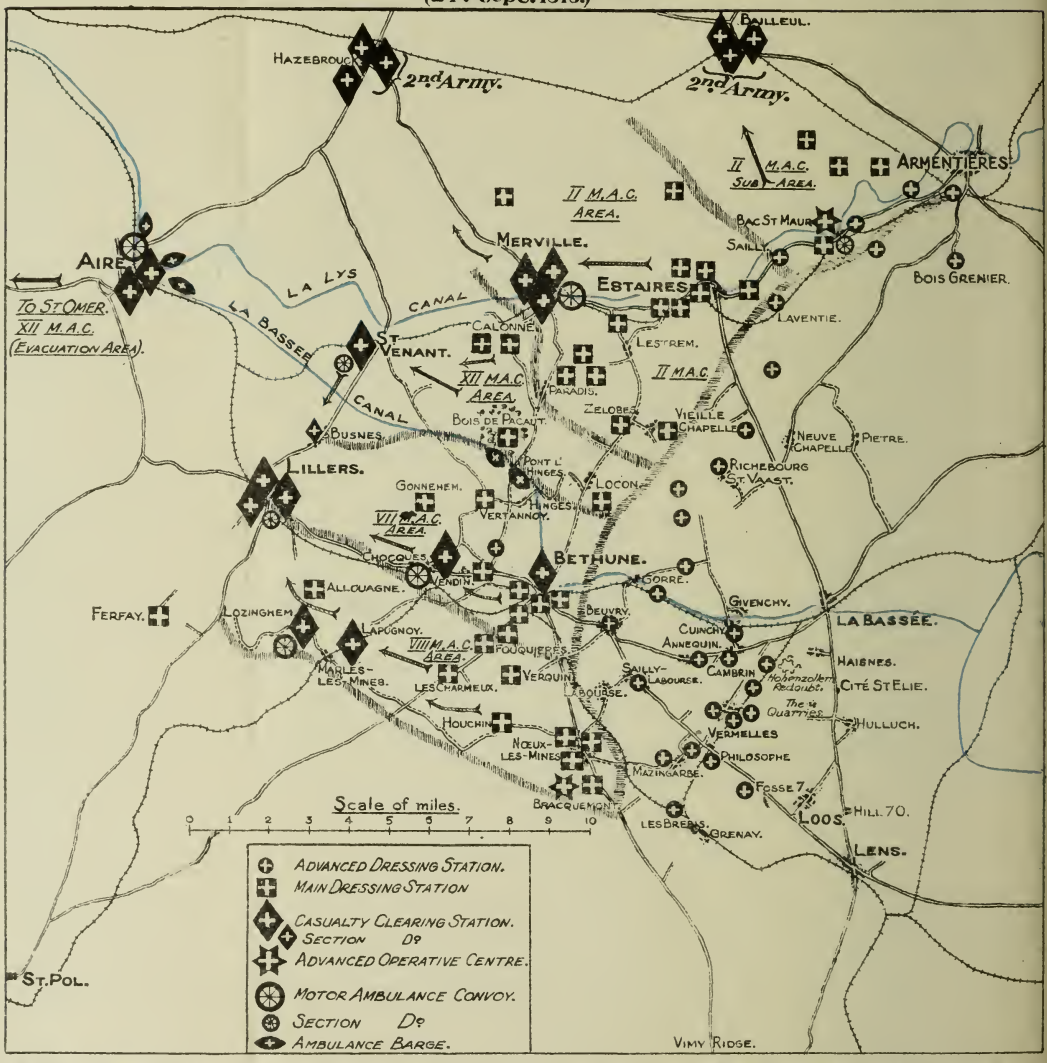
On the 8th October the enemy made a determined attack to regain their lost trenches along the whole line, but was repulsed with great loss. The attack was mainly against the French south-west of Loos, the 1st Division in the neighbourhood of the quarries, and the Guards Division in the neighbourhood of the Hohenzollern Redoubt.

During the fighting on the 13th October and subsequent days the 46th Division held the trenches in the neighbourhood of the Hohenzollern Redoubt with the 12th Division on its right and the Guards Division in reserve.

Medical Preparations for the Battle.

On the 9th September, Sir Douglas Haig, commanding the First Army, gave his D.M.S., Surg.-General W. G. Macpherson, full information regarding the intended operations and discussed with him the medical arrangements. Plans for the medical services were then carefully thought out and elaborated by the A.D.M.S. of each of the divisions, which were to commence the attack. They were examined in detail by the D.Ds.M.S. of the Corps and by the D.M.S. of the First Army, by whom a detailed scheme for clearing the divisional field ambulances to the casualty clearing stations, for the evacuation

Situation of Medical Units of 1st Army on the eve of The Battle of Loos
(24th Sept. 1915.)



NOTE The shaded lines show the limits of work allotted to each of the Motor Ambulance Convoys, and the arrows the direction of evacuation from Main Dressing Stations to Casualty Clearing Stations. Evacuation of the area in advance of the shaded line to the Main Dressing Stations, was by the motor ambulance cars of Field Ambulances.

M.D.S's in the back areas were formed by field ambulances for the sick in these areas and were cleared by their own ambulance transport to the C.C.S's.

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of the latter by railway, and for replenishing the field ambulances with stretchers and blankets, was prepared and issued in the form of an operation memorandum for the medical services of the army on the 22nd September.

All the field ambulances had by this time the new establishment of ambulance transport, namely, 7 motor ambulance wagons and 3 horsed ambulance wagons. Wheeled stretcher carriers had also been provided, or were in process of being provided, in the proportion of 20 to a division. A special stretcher, which had been devised in May, by Major J. Rogers, of the Territorial Force R.A.M.C., medical officer of the 4th Battalion of the Black Watch, was coming into use, and was in fact officially authorized for all field ambulances and regimental units shortly after the battle, in the proportion of 36 for each field ambulance, 24 for each cavalry field ambulance, 4 for each company of infantry and 2 for each squadron of cavalry.

In addition to the regulation number of field stretchers, the D.M.S. authorized each ambulance to hold a reserve of 50, and organized a dump for reserve stretchers to be kept at each casualty clearing station, from which field ambulances were instructed to obtain stretchers during the battle as required to replace those which were lost or sent back. Motor ambulance convoys were instructed to carry spare stretchers and blankets on all journeys and hand these over to the field ambulances in exchange for those taken away with the wounded. Should more stretchers be required, officers commanding field ambulances were instructed to send a message by the cars of the motor ambulance convoys to the casualty clearing station to which they were clearing the wounded, asking for the number required, and the officer commanding the casualty clearing station was responsible for sending the stretchers back in the cars on the return journey.

For replenishing the stretchers and blankets in army areas, a reserve of 2,000 stretchers and 4,000 blankets was maintained at G.H.Q. from which the First or Second Army could draw as required. Ambulance trains were also required to bring up 100 stretchers automatically on each journey from the base in order to replenish the reserve in casualty clearing stations.

The Casualty Clearing Stations.—The accommodation in the casualty clearing stations of the First Army, after the means of expansion had been fully exploited, was approximately for 11,500 sick and wounded. This accommodation was distributed as shown in the following table.

Accommodation in Casualty Clearing Stations of First Army.

Designation.	Locality.	Normal accommodation.		Expanded accommodation.		Total
		Offrs.	O.R.	Offrs.	O.R.	
No. 1	Chocques	30	700	—	900	1,630
No. 6	Lillers	84	400	90	450	1,024
No. 9	Lillers	—	390	20	550	960
2nd/1st W.Riding	Lillers	30	270	60	470	830
No. 7	Merville	—	433	100	620	1,153
1st/2nd London..	Merville	48	401	—	547	996
No. 18	Lapugnoy ..	32	288	42	330	692
No. 23	Lozinghem ..	—	200	—	300	500
Meerut	St. Venant ..	30	266	110	600	1,006
Lahore	Merville	2	400	—	600	1,002
No. 1 Canadian..	Aire (Fort Gassion)	20	400	—	500	920
No. 22	Aire	25	277	57	496	855
Totals		301	4,425	479	6,363	11,568

No. 33 C.C.S. had been sent to the First Army area on the eve of the battle. It was held in reserve at Lillers, and temporarily attached to the West Riding C.C.S., its personnel and tentage being used for the expansion of the latter, and also of No. 18 C.C.S. It was sent to Bethune on the 28th September as a special hospital for abdominal and other severe cases unfit to be moved.

In addition to the casualty clearing stations in the First Army, arrangements were made for the casualties of the IIIrd Corps to go to casualty clearing stations in the Second Army, and accommodation was reserved in G.H.Q. area for approximately 2,000 who might be evacuated there by road, namely, for 1,000 at No. 4 Stationary Hospital, Arques, 500 at No. 7 General Hospital, Malassise, 300 at No. 10 Stationary Hospital and 150 at No. 20 C.C.S., St. Omer. But in favourable weather it was estimated that a considerably greater number could be received temporarily into some of the casualty clearing stations, notably the West Riding, No. 18 and No. 23, which had been opened in fields, where temporary shelters could be provided. No. 23 C.C.S., which was under canvas in the spacious park of the Château at Lozinghem, obtained two large hangars from a neighbouring aerodrome, and also a large wooden structure belonging to a travelling theatrical company, and erected them temporarily in the grounds of the Château.

Estimate of Casualties.—Before the battle the D.M.S estimated the probable casualties as 5,000 in the IIIrd Corps, 7,000 in the Indian, 12,000 in the Ist Corps and 15,000 in the IVth Corps; or a total of 39,000 in a battle, which, it was anticipated, would last for several days. He depended on the A.D.R.T. at Bethune to keep him supplied with ambulance trains and improvised trains, and informed the A.D.R.T. on the 21st September that at least six of these would be required daily. The work of evacuation of the casualty clearing stations in Merville and St. Venant was transferred to the ambulance trains running on the northern line of evacuation in the system under the control of the A.D.R.T. of the Second Army.

Capacity of Ambulance Trains.—Sixteen ambulance trains were in France at the time. The estimated capacity of these trains is shown in the following table :—

Capacity of Ambulance Trains in September, 1915.

Designation.	Number with maximum lying down.			Number with maximum sitting up.		
	Lying.	Sitting.	Total.	Lying.	Sitting.	Total.
No. 1	188	77	265	88	461	549
No. 2	184	182	366	—	561	561
No. 3	215	20	235	135	340	475
No. 4	227	74	301	160	267	427
No. 5	130	133	263	48	298	346
No. 6	144	72	216	35	513	548
No. 7	176	134	310	94	401	495
No. 8	235	90	325	111	600	711
No. 9	144	188	332	72	466	538
No. 10	158	284	442	92	516	608
No. 11	234	—	234	—	410	410
No. 12	220	40	260	—	370	370
No. 14	144	256	400	48	448	496
No. 15	174	220	394	58	458	516
No. 16	152	320	472	48	532	580
No. 17	120	210	330	120	280	400

But just before the battle, Nos. 18, 21, 22 and 24 had also been formed, partly in France and partly in the United Kingdom. There was no ambulance train No. 13, and Nos. 19 and 23 did not embark for France until a later date in 1916. No. 20, which was formed in Abbeville in December 1915, was not completed till January 1916.

It was estimated therefore, that with the equipment kept ready at Chocques, Lillers and Merville for equipping three empty supply trains at each of these railheads, and by the

use of improvised trains of passenger coaches for sitting-up cases, congestion in the casualty clearing stations could be rapidly relieved.

Three groups, each composed of one medical officer, one N.C.O. and four men, including a cook, were withdrawn from field ambulances of the IIIrd Corps for duty in the London C.C.S. at Merville, two similar groups from the Indian Corps and one from the IVth Corps for duty in No. 6 C.C.S. at Lillers, two from the XIth and one from the Ist Corps for duty in No. 1 C.C.S. at Chocques. They were to be available as personnel of the nine supply trains, the equipment for which was held, as already noted, at Chocques, Lillers and Merville, should they be required, or for replacing personnel from the casualty clearing stations detached for such duty.

In the event of supply trains being required for wounded, the D.Ds.M.S. of the Indian Corps, of the Ist Corps and of the IVth Corps were responsible for supervising their preparation and for the evacuation of sick and wounded by them at stations in their Corps areas.

The Motor Ambulance Convoys.—For clearing the field ambulances the D.M.S. kept the motor ambulance convoys under his own control, and allotted to each convoy definite areas of work. The officer commanding a convoy was made responsible for ascertaining by means of his motor-cycle riders, of which there were seven, the position and condition of every field ambulance in the area allotted to him, and for keeping it clear of wounded. The convoys at the time in the First Army area were No. 2, No. 7, No. 8 and No. 12. No. 10 was in process of being transferred to the Third Army, and had just been replaced by No. 12, but a section was retained in the First Army until No. 12 had become accustomed to the roads.*

The stations to which ambulance trains were running were Merville, St. Venant, Aire, Lillers, Chocques and Lapugnoy. One medical officer and ten cars of No. 2 Convoy and a similar group from No. 7 and No. 8 were retained at Merville, Chocques and Lillers respectively for entraining duties. Ten cars of No. 12 were allotted for similar duties at St. Venant and Aire, five cars at each under the control of the officers commanding the Meerut and Canadian C.C.Ss. respectively. At Lapugnoy No. 18 C.C.S. was at a railway siding, and entraining was carried out direct from the unit under its commanding

* There were 14 motor ambulance convoys altogether in France before the end of September, 1915.

officer. Should ambulance trains be brought up to other stations during the battle, the D.D.M.S. of the corps, in whose area the station was situated, was made responsible for controlling the duties of entraining, but instructions were issued prohibiting entraining from field ambulances direct without special instructions from the D.M.S.

At some places, such as Merville, Aire and Lillers, where there was more than one casualty clearing station, the officer commanding one of them was kept informed by the others of the number of lying and sitting cases awaiting evacuation. He then detailed the number to be sent to each ambulance train as it came up.

Patients from No. 23 C.C.S. at Lozinghem were entrained at Lapugnoy under arrangements made by the officer commanding No. 18 C.C.S.

General Scheme of Evacuation.—There was thus worked out before the battle a complete and detailed scheme for bringing the wounded systematically to the casualty clearing stations from the main dressing stations of field ambulances and for sending them to the base by rail. Motor ambulance convoys were to work up to the main dressing stations under the direct control of the D.M.S., while all the necessary measures for collecting wounded to these from the regimental aid posts and advanced dressing stations were under the control of the A.Ds.M.S. of divisions co-ordinated by the D.Ds.M.S. of corps. As noted above, each division had 21 motor ambulance cars and 9 horsed ambulance wagons in addition to stretchers and wheeled stretcher carriers for this purpose. The D.D.M.S. of a corps with three divisions could thus control a large fleet of 63 motor ambulance cars of field ambulances and 27 horsed ambulance wagons. Except under special instructions from the D.M.S., their work was confined to the area between the main dressing stations and the fighting line. The distribution and areas of work of the convoys for clearing the main dressing stations to the casualty clearing stations are shown in the map.

The lorries of casualty clearing stations, divisional sanitary sections and field ambulance workshop units were also prepared for conveyance of casualties in order to supplement the convoys and field ambulance transport.

In making the officers commanding motor ambulance convoys responsible for clearing the main dressing stations in definite areas, instead of placing them at the disposal of the D.Ds.M.S. of corps, the D.M.S. of the army was influenced by the fact that a main dressing station of one corps might be

geographically in the area of another, and that corps and divisions were liable to frequent alterations in their areas. The D.M.S. was also in a better position than the D.Ds.M.S. of corps to know where the greatest or least congestion of wounded was occurring, and so to contract or expand the convoy area to meet any change in the situation.

Definite instructions were issued with regard to the casualty clearing stations to which the wounded in each convoy area were to be cleared.

The method of clearing the field ambulances of the IIIrd Corps was, however, specially organized. The nearest casualty clearing stations in the First Army were at Merville, and the journey from the neighbourhood of Armentières, through Bac St. Maur and Sailly-sur-la-Lys was long, and the road roughly paved. Arrangements were accordingly made, through G.H.Q., to have the wounded of the IIIrd Corps divisions taken to the casualty clearing stations in the Second Army area at Bailleul, the D.D.M.S. of the IIIrd Corps controlling the evacuation in direct communication with the D.M.S., Second Army. A section of No. 2 M.A.C. was stationed at Bac St. Maur for this purpose, and as no severe fighting was contemplated in the IIIrd Corps area after the 25th September, the field ambulance transport was also to be used.

It will be seen from the map that the convoy area of No. 8 M.A.C. was the narrowest, as it was in it that the field ambulances were likely to be most congested. The convoy was to clear to No. 18 C.C.S. at Lapugnoy, No. 23 at Lozinghem, and to the West Riding C.C.S. at Lillers ; the more severely wounded to Lapugnoy, and the slighter cases to the casualty clearing stations further back. As Lozinghem was about two miles from the entraining station at Lapugnoy, it was kept, so far as possible, for the reception of sick and wounded able to walk. The convoy area north of that of No. 8 M.A.C. was cleared to No. 1 C.C.S. at Chocques and to No. 6 and No. 9 at Lillers.

At Lapugnoy there were sidings where ambulance trains could be garaged and sent to the other entraining stations as required.

In addition to the railway transport, arrangements were made with G.H.Q. to send sick and wounded by road to St. Omer by the motor ambulance convoy under G.H.Q. control should such a course be necessary. The barges of No. 2 Ambulance Flotilla were on the Aire-La Bassée Canal, navigating as far forward as Pont de Hinges. Arrangements were also made for barges of the flotilla to navigate as far as Bac St. Maur, between Estaires and Armentières, if necessary.

Advanced Operating Centres.—In preparing for the battle an important step had been taken for the purpose of enabling surgical operations to be carried out at the earliest possible moment on penetrating wounds of the abdomen. Before the war it was considered best to leave these wounds at rest in consequence of the unfavourable results of operating on them during the South African War. But the specialist surgeons, notably in No. 1 C.C.S. at Chocques and the London C.C.S. in Merville were saving many lives from early operative treatment, and the D.M.S. of the First Army had given instructions that men wounded in the abdomen should be sent at once to these casualty clearing stations in the field ambulance transport without waiting for them to be removed from the dressing stations by motor ambulance convoy. Consequently, in preparing for the battle of Loos, both these casualty clearing stations continued to be the units to which such cases were to be sent without delay ; but in addition to them, an advanced operating centre was prepared in a thread factory on the banks of the canal at Bac St. Maur, in No. 26 Field Ambulance of the 8th Division, and a similar advanced operating centre in hospital huts left by the French at a school in Bracquemont, the mines suburb of Nœux-les-Mines. A special staff of surgeons, nursing sisters and orderlies, together with hospital beds and special equipment, was appointed to each of these advanced operating centres ; Captain J. Fraser was selected from No. 7 C.C.S. as surgical specialist for the Bac St. Maur centre, and Captain O. Richards from No. 6 for the Nœux-les-Mines centre. They worked under the supervision of the consulting surgeon. In subsequent battles, it may be mentioned, the formation of specially staffed advanced operating centres for early operative treatment of wounds of the abdomen became the rule.

Divisional Preparations for the Battle.

With regard to the preparation of the medical services with divisions, shelter from artillery fire was provided in practically all the advanced dressing stations. Some of these shelters were specially constructed ; others, such as the advanced dressing station at Vermelles, were in cellars. The positions of these and of the main dressing stations are shown on the map.

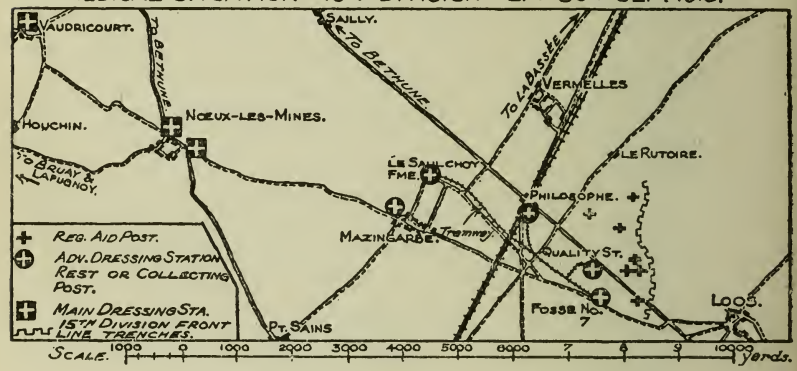
Many were connected with aid posts by communication trenches, and with advanced dressing stations further back by tram or trolly lines.

15th Division.—The medical units employed were Nos. 45, 46 and 47 Field Ambulances, and No. 32 Sanitary Section. They were distributed as follows :—

Advanced Dressing Stations :—		
Mazingarbe	No. 45 Field Ambulance.	
Quality Street	No. 46 ,, ,,	
Fosse 7	No. 47 ,, ,,	
Collecting Posts :—		
Brewery and Chateau, Mazingarbe	No. 45 Field Ambulance.	
Brewery, Philosophe ..	No. 46 ,, ,,	
Main Dressing Stations :—		
Nœux-les-Mines	No. 45 Field Ambulance.	
Vaudricourt	No. 46 ,, ,,	
Nœux-les-Mines	No. 47 ,, ,,	

The advanced dressing station at Mazingarbe was at the abattoir, where four capacious dug-outs were prepared, each

MEDICAL SITUATION—15TH DIVISION—21ST–30TH SEPT. 1915.



capable of sheltering 12 lying-down cases. Access to two of these was by a doorway and steps leading from the interior of the building. These two dug-outs were connected to two others by means of a trench 6 ft. broad and about 50 yds. long. This was provided with seats on one side, for a portion of the way, capable of affording accommodation for about 50 sitting cases. A fifth dug-out across the road afforded shelter for 12 lying cases. The abattoir itself had lying accommodation for 200 cases. The advanced dressing station at Quality Street was in 48 houses and cellars, giving accommodation for 350 lying and 150 sitting cases. At Fosse 7 shelters accommodating 120 lying and 120 sitting cases were constructed and provided protection from shell splinters and shrapnel fire.

At the collecting post at Mazingarbe the brewery and neighbouring château had accommodation for 200 lying and 300 sitting cases, and that at Philosophe for 200 lying and 100

sitting cases. The latter was in capacious cellars protected from shell-fire by sand bags above, and propped up inside with beams to bear the extra weight thus superimposed on the roof of the cellars. Electric light was laid on.

The main dressing station of No. 45 Field Ambulance in Nœux-les-Mines occupied the Mairie, a school, a barn and other buildings with accommodation for 400 lying cases. No. 47 Field Ambulance occupied two schools at Nœux-les-Mines with accommodation for 400 lying and 300 sitting cases, and No. 46, which was in barns and tents at Vaudricourt, could accommodate 300 lying and 400 sitting cases. There was thus accommodation in the field ambulances of the 15th Division as follows :—

	Lying.	Sitting.
Advanced dressing stations	730	320
Collecting posts	400	400
Main dressing stations	1,100	900
Total	2,230	1,620

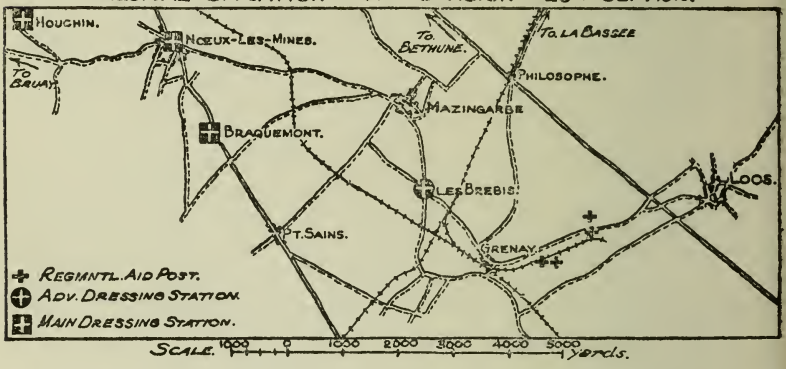
The officer commanding No. 32 Sanitary Section, with nine N.C.Os. and men did duty with No. 47 Field Ambulance, and one serjeant and ten men with No. 46 Field Ambulance at the divisional collecting station. All ranks volunteered for this duty, which was quite distinct from their normal duties.

All posts had a kitchen and were well lighted and supplied with medical and surgical material, reserves of rations and water.

Special communication trenches were set aside, for carriage of wounded only, from regimental aid posts to the advanced dressing stations at Fosse 7 and Quality Street. A tramway line ran from Quality Street and Fosse 7 to the breweries at Philosophe and Mazingarbe. It was for this reason that rest posts had to be provided at these places. The small trucks used at the colliery were refitted with wooden platforms and rails. Three lying down cases could be carried on the platforms, and two on stretchers on the rails above. Twenty-four trollies were provided. They were man-handled to and from the breweries. In addition eight wheeled litters were given to each field ambulance for use at advanced dressing stations. From the breweries and advanced dressing station at Mazingarbe to the main dressing stations carriage by motor cars and horsed ambulance and general service wagons was provided. The 30-cwt. motor lorry of the sanitary section

was fitted with seats for 24 wounded. This ran between the brewery Philosophe and the main dressing station of No. 46 Field Ambulance at Vaudricourt.

The bombardment of the German position began on 21st September. On the previous night the advanced dressing stations at Fosse 7 and Quality Street were opened, a bearer sub-division of No. 47 Field Ambulance being sent to the former and a similar detachment of No. 46 Field Ambulance to the latter place. At Philosophe brewery No. 46 Field Ambulance had a tent sub-division; at Mazingarbe the rest post was occupied by one officer and seven other ranks, and the advanced dressing station at the abattoir by two bearer sub-divisions of No. 45 Field Ambulance. The main dressing



stations of No. 47 Field Ambulance at Nœux-les-Mines and No. 46 Field Ambulance at Vaudricourt were open also on the evening of 20th September. No. 45 Field Ambulance opened its main dressing station at Nœux-les-Mines on 24th September. On the evening of 24th September the strength of the advanced dressing stations was increased as follows :—

Fosse 7	By 2 bearer sub-divisions of No. 47 Field Ambulance.
Quality Street	By 2 bearer sub-divisions of No. 46 Field Ambulance.
Divisional Collecting Station ..	By 1 N.C.O. and 10 men of No. 32 Sanitary Section.

47th Division.—The 47th Division further south had aid posts, each capable of taking 250 lying down cases, in cellars of houses along the road and railway parallel to it from Grenay towards Loos, with an advanced dressing station at Les Brebis, about two miles distant, in a well appointed French auxiliary

hospital. Wheeled stretchers were employed and ambulance cars were able to go up to the regimental aid posts at night. The main dressing stations were at Nœux-les-Mines and Bracquemont, with one further back at Houchin, and ambulance cars could work between the advanced dressing station and main dressing station both day and night.

1st Division.—The 1st Division medical arrangements are best described in the following map. The field ambulances were distributed as follows :—

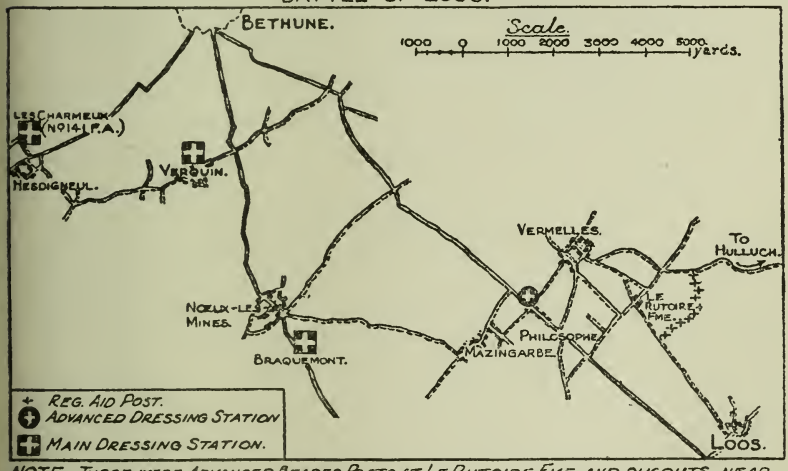
Advanced Bearer Post—Le Rutoire Farm.
No. 1 F.A.—3 officers and 27 other ranks.
No. 2 F.A.—Ditto.

Advanced Dressing Station—Philosophe.
No. 1 F.A.—Tent sub-division.
Nos. 1, 2 and 3 F.A.—Bearer division, less detachments at Le Rutoire.

Main Dressing Stations.
Verquin.—No. 2 F.A.
Mine's School, Bracquemont.—No. 1 F.A.

In reserve and for sick.
Les Charmeux, near Hesdigneul.—No. 141 F.A.

MAP OF MEDICAL ARRANGEMENTS 1ST DIVISION FOR THE BATTLE OF LOOS.



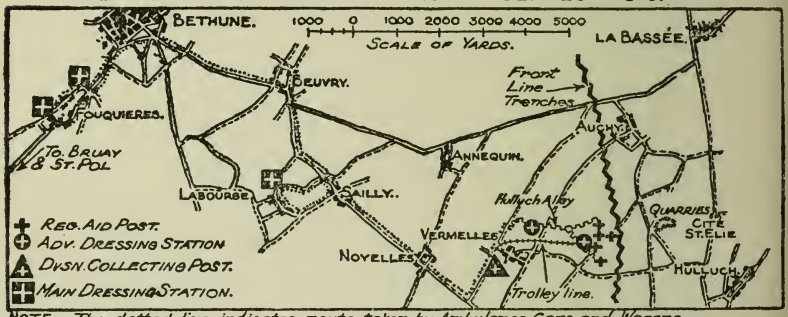
NOTE. THERE WERE ADVANCED BEARER POSTS AT LE RUTOIRE FME. AND DUGOUTS NEAR.

The advanced bearer posts were in the farm at Le Rutoire and in dug-outs near it. A feature of the arrangements in this division was the placing of bridges at certain points over the trenches to facilitate the work of the stretcher bearers. This was done by the Royal Engineers at the request of the A.D.M.S. The main dressing station at Verquin was about

six miles by road from the advanced dressing station at Philosophe. No. 141 Field Ambulance had replaced No. 3 Field Ambulance in the 1st Division, when the latter went to the Guards Division. Although opened for sick at Les Charmeux, it received a large number of wounded during the battle, owing to the congestion in the main dressing stations further forward.

These were the arrangements for the battle in the divisions of the IVth Corps. Similar preparations were made in the Ist Corps: but its divisions made more use of special divisional collecting posts for walking wounded than those of the IVth Corps.

MEDICAL SITUATION—7TH DIVISION—SEPT 25TH 1915.



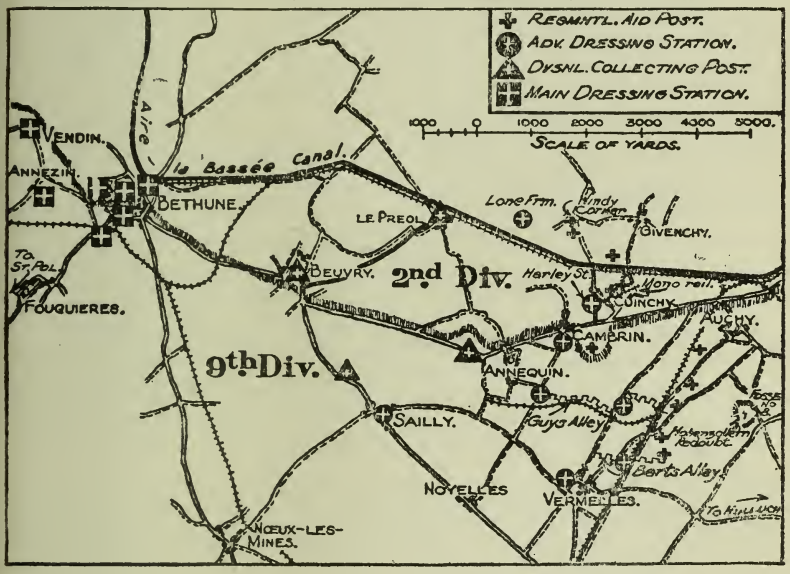
NOTE. *The dotted line indicates route taken by Ambulance Cars and Wagons.*

7th Division.—The 7th Division, which was to advance on Hulluch, Cité St. Elie, the Quarries and Fosse 13, had its advanced dressing stations in the communication trenches, known as Hulluch Alley, with a large divisional collecting station in the cellars of the château at Vermelles. A trolly line ran to Vermelles from the support trenches. Twenty-three trollies, each taking two stretchers or four sitting cases, were used on it. Two relay posts for bearers were formed along the Hulluch Alley for wounded brought back on stretchers to the advanced dressing station at the commencement of the alley. This trench had been deepened and widened for the stretcher bearers: and large dug-outs had been constructed for the relay posts and advanced dressing stations. The main dressing stations were at Labourse and Fouquières, and the ambulance transport was assembled on the Bethune-Lens road just south of Sailly-Labourse. The cellars and entrances to them at Vermelles were protected by a strong wall of sandbags, four

feet thick at the base and about twelve feet high. They gave good protection not only to the men but also to the ambulance cars. The regimental aid posts were in the trenches at battalion headquarters, in dug-outs, each for six "stretcher" or ten "sitting" cases.

9th Division.—The 9th Division was in the trenches facing the Hohenzollern Redoubt and Fosse No. 8. A railway line running west from the La Bassée-Vermelles line divided the areas for collecting its wounded into a north and south area.

MEDICAL SITUATION – 9TH & 2ND DVSNS – SEPT 25TH 1915.



Arrangements were made to bring the wounded from the north area down by a special trench for wounded, sufficiently wide for wheeled stretchers, known as Guy's Alley, to a dressing station in dug-outs for 24 stretcher cases at the point where the La-Bassée-Vermelles road crosses the railway, and thence to a dug-out in a factory further back at the commencement of Guy's Alley. They were thence to be taken by trollies, of which there were six carrying six stretchers each, to the Noyelles-Cambrin road and thence by ambulance transport to an advanced dressing station in the church at Cambrin. South of the railway line a similar trench was dug for wounded, called Bart's Alley, which communicated with a

dressing station (Bart's) where it crossed the La Bassée-Vermelles railway line, and where there were four dug-outs for 24 stretcher cases. The alley was continued from there to the La Bassée-Vermelles road, whence the wounded were taken by road to an advanced dressing station in cellars of the brewery at Vermelles, capable of sheltering 200. Two divisional collecting stations for walking wounded were formed, one just west of Annequin on the Bethune-La Bassée road and the other at the north end of Sailly-Labourse. There was also an advanced dressing station at the latter for 300. The main dressing stations were formed by No. 27 and No. 29 Field Ambulances in Bethune, the former in the Ecole Jules Ferry, south of the railway on the St. Pol road, and the latter in the French civil and military hospital. The division had two horse-drawn refreshment caravans, voluntary gifts, one with No. 27 and the other with No. 29 Field Ambulance. They were moved up to the collecting stations and provided hot soup and comforts to the wounded as they passed through. The third field ambulance of the division, No. 28, was at Vendin, west of Bethune, but a tent sub-division of No. 29 was also kept there, and one of No. 27 at Annezin, as positions for main dressing stations in the event of the field ambulances being shelled out of Bethune, and as supplementary main dressing stations.

2nd Division.—The 2nd Division medical services occupied positions north and south of the La Bassée Canal as during the battles of Neuve Chapelle and Festubert, and had its field ambulances distributed as follows :—

Advanced Dressing Stations.
Harley Street, S. of the canal.
Lone Farm, N. of the canal.

Collecting Stations for walking wounded.
Beuvry, for southern area.
Le Preol, for northern area.

Main Dressing Stations.
Bethune.
Seminary St. Vaast.—No. 6 F.A.
Ecole Maternelle.—No. 5 F.A.
Ecole des Jeunes Filles.—No. 19 F.A.

The advanced dressing stations were near the commencement of the communication trenches, and there was also an advanced dressing station south of the La Bassée road and Harley Street, but wounded received in it were transferred to Harley Street for further evacuation. An overhead mono-rail had been constructed for bringing stores to the trenches from Harley Street, and use was made of it for bringing back wounded. No. 19 Field Ambulance, which had replaced No. 4 Field

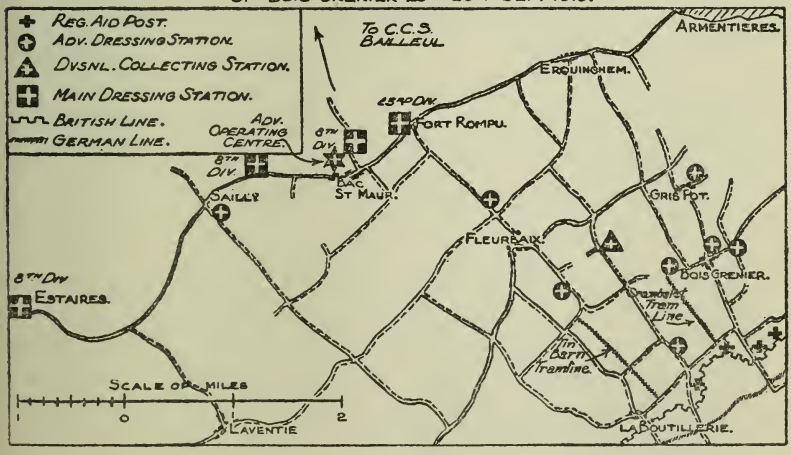
Ambulance on the latter's transfer to the Guards Division on the 19th August, was at first opened under canvas at Le Vertannoy, west of Hinges, but was moved on the 26th September to the Ecole des Jeunes Filles, Bethune, so that all three field ambulances of the 2nd Division were then in Bethune.

Medical Preparations for Subsidiary Actions.

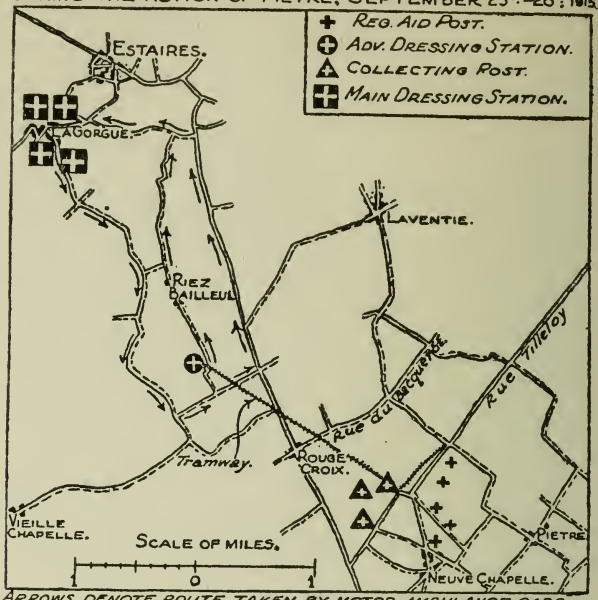
Preparations for the medical services in the Indian and IIIrd Corps and Second Army area during the subsidiary actions on the 25th and 26th September, were made with the same detailed care as for the divisions, which were engaged in the main battle. The conditions of the advanced dressing stations had been greatly improved by the construction of large sheltered dug-outs, and in several places tram-lines were used for bringing wounded back from the trenches. The following sketches of the arrangements for these subsidiary actions of the 8th and 23rd Divisions at Bois Grenier, and of the Meerut Division at Pietre, are good examples of the general organization for clearing the wounded from the trenches by tram-lines. These sketches are also sufficient to explain the arrangements of these divisions during the subsidiary actions on the 25th and 26th September.

With regard to the subsidiary action at Bellewaarde, in the Second Army area, by the 3rd and 14th Divisions, the system of collecting and evacuation is also indicated in the sketch map.

SITUATION OF MEDICAL UNITS OF 8TH & 23RD DIVISIONS DURING THE ACTION OF BOIS GRENIER 25TH 26TH SEPT 1915.

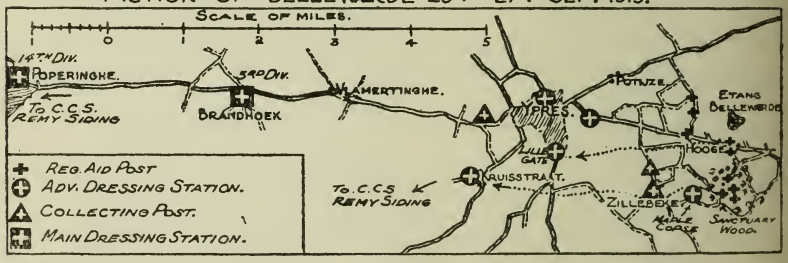


SITUATION OF MEDICAL UNITS OF THE MEERUT DIVISION DURING THE ACTION OF PIETRE, SEPTEMBER 25TH–26TH 1915.



ARROWS DENOTE ROUTE TAKEN BY MOTOR AMBULANCE CARS WORKING BETWEEN A.D.S. AND M.D.Ss.

SITUATION OF MEDICAL UNITS OF 3RD & 14TH DIVISIONS DURING THE ACTION OF BELLEWERDE 25TH–27TH SEPT 1915.



In addition to these preparations in divisions, corps, and army areas for the collection and evacuation of wounded during the battle, each medical post through which wounded passed on their way back to the casualty clearing stations was specially equipped for the treatment and relief of casualties from gas or flame projectors.

Collection and Evacuation of the Wounded during the Battle.

As a general result it was found during the battle that the divisional arrangements were so good that the wounded came in more rapidly to the main dressing stations than the motor ambulance convoys could evacuate them to the casualty clearing stations. Consequently, the D.M.S. arranged with the A.D.R.T. for ambulance trains and improvised ambulance trains to run to Nœux-les-Mines and Bethune, for direct evacuation from the field ambulances at these places. Also on the 28th September he sent No. 33 C.C.S. to take over the Seminary St. Vaast in Bethune, where No. 5 and No. 6 Field Ambulances had previously been instructed to act as casualty clearing stations for evacuating wounded by train. With few exceptions the scheme for collecting and evacuating the wounded worked well and smoothly.

The number of wounded received day by day into the field ambulances of the divisions of the First Army between 9 a.m. on 25th September and 9 a.m. on 1st October was 29,720. Many of these were sent direct to the trains coming up to Nœux-les-Mines and Bethune, and 1,175 were evacuated from the IIIrd Corps area to casualty clearing stations of the Second Army at Bailleul. Excluding these, 22,315 of the 29,720 were cleared by the convoys to the casualty clearing stations of the First Army during that period, and 23,473 were evacuated to the bases by train, over 2,174 by road and 113 by barge. At 9 a.m. on the 1st October only 377 were remaining in the field ambulances and 883 in the casualty clearing stations.

The numbers day by day, of which the above figures are the totals for the period, are shown in the following table :—

Date.	Admitted.		Evacuated.		
	Into F.As.	Into C.C.Ss.	By train.	By road.	By canal.
25th/26th	13,910	7,464	1,894	—	—
26th/27th	7,107	5,935	6,200	649	—
27th/28th	5,348	5,389	5,107	1,364	24
28th/29th	2,038	2,220	4,211		89
29th/30th	854	895	3,803		—
30th/1st	463	412	2,258	161	—
Total	29,720	22,315	23,473	2,174	113

The clearing of the casualty clearing stations by railway transport worked well, and with the aid of improvised passenger trains for sitting up cases, more specially for those accumulating

in field ambulances at Nœux-les-Mines and Bethune, and with the road transport to St. Omer, there was steady relief of congestion in the casualty clearing stations, and the estimate made before the battle of the requirements of accommodation and means of evacuation proved sufficient. One point, however, was brought out. It was found that the system of sending the severe cases to the most advanced casualty clearing stations and the slighter cases to those further back was inconvenient. Many of the trains could not be fully loaded with lying down cases only and had either to go to other entraining stations to fill up with sitting cases, or go to the base partially filled. Also the number of severe cases in the casualty clearing station receiving them was often more than one ambulance train could take, so that there was a gradual accumulation of these cases at times. It was obvious, therefore, that the best use of casualty clearing stations was to fill them in rotation with both lying down and sitting up cases. The D.M.S. consequently issued orders on the 1st October to the motor ambulance convoys to fill the casualty clearing stations up to 500 each in rotation ; and this was the practice in subsequent operations, modified to the extent that the numbers sent in rotation became more and more limited as the surgical work in casualty clearing stations became more and more important and more extended. This method of filling casualty clearing stations also led to a redistribution of the personnel sent to reinforce temporarily the casualty clearing station establishments. Twelve or fourteen medical officers were sent to each of the casualty clearing stations to which wounded were being brought from the area of active fighting, instead of a comparatively larger number to the advanced casualty clearing stations for severe cases and a smaller number to those further back.

A good description of the work of collecting wounded during the battle is given in a report by Colonel Rawnsley, the A.D.M.S. of the 15th Division, from which the following extracts are taken :—

" On the morning of 25th September the infantry assault was preceded at 5.50 a.m. by a gas and smoke attack ; at 6.30 a.m. the infantry stormed the enemy's trenches with the bayonet and casualties very shortly began to arrive at the advanced dressing stations. The process of clearing the field worked well. As the troops advanced the regimental medical establishments followed up, forming new aid posts in more advanced positions ; contact was well maintained between these regimental stretcher bearers and those of the bearer divisions of No. 46 and No. 47 Field Ambulances. The wounded unable to walk were conveyed by stretcher carriage to the advanced dressing stations at Fosse 7 and Quality Street. The tramway from the advanced dressing stations worked to the divisional collecting station at Philosophe and by this means the wounded were rapidly evacuated ; those able to walk followed

in most cases the branch of the tramway to Mazingarbe and were admitted to the rest post and advanced dressing station of No. 45 Field Ambulance at this place.

"From Philosophe brewery evacuation was by the twenty-one motor ambulance cars of the divisional field ambulances, and the sanitary section motor lorry, to the main dressing stations of No. 45 and No. 47 Field Ambulances at Nœux-les-Mines, and of No. 46 Field Ambulance at Vaudricourt. The motor ambulance cars also cleared on 25th September Quality Street and Fosse 7 by day, but on the following day, owing to heavy shell-fire, they were driven back and were unable to clear from there until the evening.

"The horse ambulance wagons and general service wagons cleared from the divisional collecting station and advanced stations at Mazingarbe to all the main dressing stations.

"On the afternoon of 25th September I sent on a bearer sub-division of No. 46 Field Ambulance under Lieutenant J. R. Turner, R.A.M.C., to Loos to endeavour to bring in wounded from there. He went forward collecting them, but his party was subjected to shell-fire and was also gassed by asphyxiating shells. This officer was subsequently wounded and admitted to a field ambulance.

"On Sunday, 26th September, I ordered 'C' Section, No. 45 Field Ambulance, to proceed to Loos and there open a dressing station. The section opened one in a house on the main Bethune–Lens road 1,000 yards south-west of Loos and collected wounded until Monday at noon 27th September, when they were shelled out of it. The officer in charge, Captain H. R. Friedlander, R.A.M.C., was badly gassed but had all his wounded removed by stretcher carriage to Quality Street. He remained behind and endeavoured under heavy shell-fire to put his horses in the vehicles and bring them away. Several horses were killed and others stampeded, and the equipment was left. He showed very great gallantry on this occasion.

"The casualties in the division during the course of the operations were enormous. I think I am correct in saying that they exceeded those on any previous occasion during the war. The figures speak for themselves. The admissions were as follows:—

21st September 1915 to 6 a.m. 25th September 1915	66
6 a.m. to noon 25th September 1915	153
Noon 25th September 1915 to noon 26th September 1915..	2,434
Noon 26th September 1915 to noon 27th September 1915..	1,662
Noon 27th September 1915 to noon 28th September 1915..	448
Total	4,763

"Some of the above casualties were amongst men of other divisions, but none the less the work entailed by the field ambulances was the same. The number of these was 889.

"The total of casualties of the 15th Division reported as admitted into other divisional field ambulances was 423.

"The total of the 15th Division casualties accounted for was thus the large number of 4,297 of all ranks.

"With the exception of about 100 cases, all the casualties admitted to our field ambulances, which meant 4,600 cases, had been collected, their wounds dressed, and all ranks fed and housed by Sunday, 26th September, at midnight. It was obviously impossible to accommodate such large numbers in the field ambulances, so the difficulty was overcome by billeting the lighter cases, which entailed much extra work for the medical establishments.

"Owing to the blocking of the roads by troops, the motor ambulance convoy was unable to clear sufficiently to do very much to ease the pressure on the field ambulances until the evening of the 27th September. The task, therefore, of maintaining and redressing the wounded had thus to be continued until Monday, 27th September. The work of clearing the battlefield of wounded had been done so rapidly and well that on the morning of the

27th I was able to place at the disposal of the D.M.S., First Army, fourteen motor ambulances to assist the motor ambulance convoys in evacuating wounded. Evacuation by No. 8 M.A.C. from the 27th September was rapid, and by the 29th all cases had been sent to casualty clearing stations except 48 mild gas cases, which remained in No. 46 Field Ambulance on 30th September. The scheme for removing the wounded worked admirably, and it is entirely due to the zeal and devotion to duty of all ranks, both of the regimental medical and field ambulance establishments, that such splendid results were obtained, and the battlefield was cleared of 4,600 casualties by Sunday night. All ranks worked night and day for three days. In conclusion I should like to place on record the heroism displayed by the wounded which lightened the task of those who had to minister to them. No murmur or groan was heard amongst this vast assembly of stricken heroes, many with grievous wounds, joking and making light of them, and cheering up their wounded comrades. It was an honour appreciated by all ranks of the medical service to serve such men. In closing this report I wish to place on record the courageous and devoted services rendered to the British Army by Mdlle. Emilienne Moreau, the particulars of which were furnished me by Captain F. A. Bearn, R.A.M.C., officer in medical charge 9th Black Watch. This girl, who is only 17½ years old, was living with another woman in a shop at Loos in the Church Square. These premises were taken as a regimental aid post by Captain Bearn and these two women spent the whole day and night (25th–26th September) in helping to carry in the wounded and carry out the dead, also preparing food and coffee for all, refusing payment. This work was done continuously for twenty-four hours. When the British troops were making ineffective efforts to dislodge two German snipers from the next house, who were firing on the stretcher bearers, this young girl seized a revolver from an officer and went into the back of the house and fired two shots at the snipers. She came back saying 'C'est fini,' and handed the revolver back to the officer. It is uncertain if the two shots actually killed the men but the diversion in the rear enabled our men to effect an entrance in front. Captain Bearn states: 'I saw many examples of cool courage that day, but none that excelled hers.'"

When it was found that No. 8 M.A.C. owing to the congestion of the roads* was unable to prevent congestion in the main dressing stations of its area of work, the D.M.S. added to it cars from No. 12 M.A.C., and contracted its area, in order to place the Verquin main dressing station in the area of No. 7 M.A.C., which had comparatively less work to do in the area assigned to it.

On the 26th September thirty omnibuses arrived at Nœux-les-Mines with orders from the D.G.M.S., without reference to the D.M.S. of the Army, to take sitting cases back to No. 4 Stationary Hospital at Arques. Although they relieved the field ambulances of some 700 slighter cases awaiting evacuation at Nœux-les-Mines, they were not actually required, as the D.M.S. had already brought up an improvised train to Nœux-les-Mines for 1,200 of these cases. Consequently there were less than 500 left to go on the train. The railway authorities

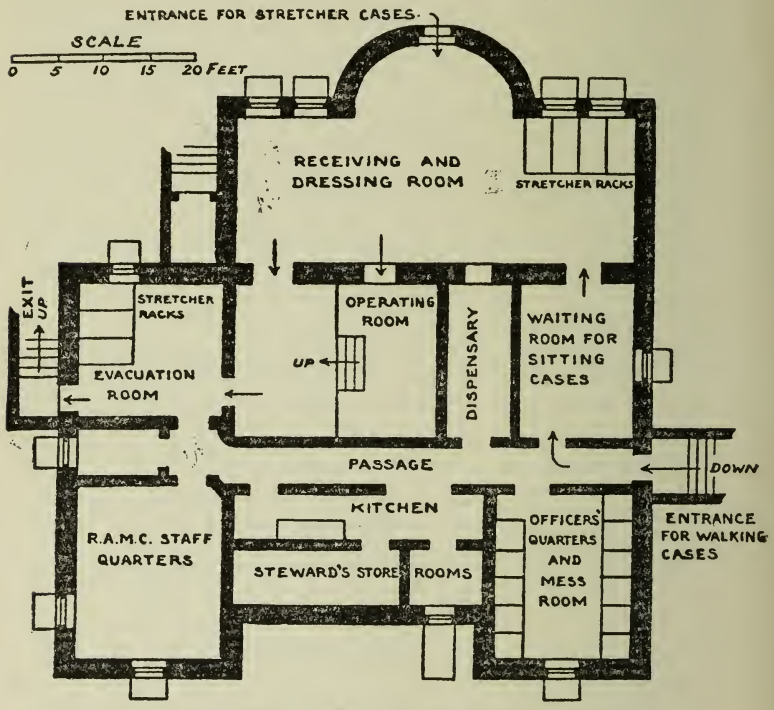
* When the XIth Corps divisions were moving up to the battle front on the 25th September, it was for some hours impossible to get the motor ambulance cars up to the main dressing stations in Nœux-les-Mines and its vicinity in sufficient numbers to relieve congestion.

complained of the train having been brought to Nœux-les-Mines for that small number. Again on the 27th September, the D.A. and Q.M.G. of the XIth Corps, without reference to the D.D.M.S. of the IVth Corps, who was in charge of the arrangements for evacuation by train at Nœux-les-Mines, ordered a number of walking wounded waiting at one of the field ambulances to entrain on an ambulance train which had been brought up to Nœux-les-Mines for stretcher cases from other field ambulances, with the result that when the latter arrived at the station to entrain, the train was found full of slightly wounded, who had then to be removed and sent back to their field ambulance. The confusion caused by both these incidents arose through orders being given to medical units by superior officers, without the knowledge of and without referring to the officers co-ordinating the arrangements for evacuation. Large numbers of slight cases were at a field ambulance on the main street at the Bethune approach to Nœux-les-Mines, and were seen there by the D.G.M.S. and the staff of the XIth Corps when they entered the town. No doubt this gave them the impression that the orders given by them would help to clear them more rapidly.

An incident also occurred on the 13th October in connexion with the collection of wounded of the 46th Division from the Hohenzollern Redoubt. A staff officer of the division visited the advanced dressing station in the cellars at Vermelles Château, and impressed by the numbers arriving and the exhaustion of the bearers applied to the staff of the XIth Corps for additional stretcher bearers without consulting his A.D.M.S. The staff of the XIth Corps passed the application on to the staff of the Army without consulting the D.D.M.S. of the corps, with the result that the D.M.S. of the army had to send a bearer division from the 19th Division of the Indian Corps to Vermelles, although there were bearer divisions both of the 46th Division and of other divisions of the XIth Corps in reserve, which the A.D.M.S. and D.D.M.S. of the XIth Corps could have sent to Vermelles, and in fact were sending there. The bearer division from the 19th Division was in fact not actually required at Vermelles. The bearers at Vermelles were much exhausted chiefly because they had been worked continuously instead of in shifts, as had been the practice in other divisions; and this in a measure led to the urgent demand for relief.

The scheme for replenishing stretchers enabled the field ambulances to obtain promptly as many stretchers as they required during the progress of the battle. Several of the field

ambulances, however, had been drawing on the reserves at the casualty clearing stations before the battle, so much so that there was a dearth of reserves in some places. Measures had to be taken before the battle to prevent this, and had these measures not been taken it would not have been possible in some instances to replenish the field ambulances which had adhered to the instructions. Each field ambulance, as already



Advanced Dressing Station at Château Vermelles.
Plan of Basement Floor.

noted, had been given fifty additional stretchers before the battle and every stretcher taken back from it was replaced by the motor ambulance convoy, while extra stretchers were obtained by the same means when required. The number of stretchers which could be used at any one time depended on the number of bearers, so that a large accumulation of stretchers in forward areas beforehand would not have been so useful

as reserves further back, from which the most urgent demands could be supplied, and would have involved the maintenance of stretchers, of which the number in France was limited at the time, in places where there might be no need for them.

The work of the medical services in the operations subsequent to the 1st October on the Loos front was comparatively easy, with the exception noted above of the incident in the 46th Division. The distribution of corps and divisions differed from that of the earlier phase of the battle, but the general provisions of advanced and main dressing stations, and the scheme of evacuation remained the same, the medical units of one division taking over the posts held by the units of the division which they relieved.

The advanced operating centre at Nœux-les-Mines was closed on 1st October, as the French, on taking over the trenches in the neighbourhood of Loos and those previously occupied by the 47th Division, also took over the Bracquemont suburb of Nœux-les-Mines for their medical units. No. 33 C.C.S. at Bethune then became an advanced operating centre for abdominal wounds and other severe cases, such as wounds of the chest.

Weather.

The weather during this period was variable. Heavy rain fell on the afternoon of the first day, but on the subsequent days there was rain only occasionally, and the weather alternated between warm sunny and cold raw days. During the action of the Hohenzollern Redoubt there was little or no rain but most days were misty.

The British used gas for the first time as an offensive weapon in this battle. Unfortunately the weather was not very favourable, and a considerable number of the British, especially in the Ist Corps area, got gassed with a change of wind. The cases were, however, generally extremely mild.

Casualties.

The following is a summary by corps and divisions of the total number of wounded dealt with by the medical services during the battles :—

The total wounded in the First Army in the battles between the 25th September and 20th October was consequently 37,228, a number which approximates very closely to the estimate of 39,000 made before the battle.

Battle of Loos.

(25th September to 8th October 1915).

	Officers.	Other Ranks.
Ist Corps—		
2nd Division	182	4,728
7th Division	92	2,036
9th Division	76	5,404
28th Division	36	994
IVth Corps—		
1st Division	145	2,891
15th Division	65	4,243
47th Division	103	2,237
3rd Cav. Division	28	390
XIth Corps—		
Guards Division	62	1,678
21st Division	40	1,781
24th Division	6	479
12th Division	17	637
46th Division	1	1
Totals	853	27,499

Action of Pietre.

(25th September to 27th September).

	Officers.	Other Ranks.
IIIrd Corps—		
20th Division	17	497
Indian Corps—		
Meerut—British	47	707
Indian	10	1,017
Lahore—British	8	57
Indian	—	197
19th Division	21	504
Totals	103	2,979

Action of Bois Grenier.

(25th September to 27th September).

	Officers.	Other Ranks.
IIIrd Corps—		
8th Division	19	673
23rd Division	7	215
Totals	26	888

Action of Hohenzollern Redoubt.
(13th October to 20th October.)

	Officers and Other Ranks.
IVth Corps—	
1st Division	589
XIth Corps—	
Guards Division	704
12th Division	1,769
46th Division	1,809
Total	4,871

Evacuation by Regular Ambulance Trains.
(25th September to 9th October, 1915.)

Date. 1915.	A.T. No.	Loaded at	Detrained at	Patients carried. Sick and wounded. British.	Indian.	P. of W.	Total.
Sept. 25	3	Merville	Boulogne	339	—	—	339
	7	Merville	Boulogne	10	499	—	509
	10	Lillers	Le Treport	533	—	—	533
	22	Chocques, Lillers, Aire, St. Venant and Merville.	Boulogne	430	97	—	527
			Total	1,312	596	—	1,908
Sept. 26	2	Chocques and Lillers ..	Boulogne	418	—	—	418
	3	Chocques	Boulogne	159	—	—	159
	4	Lapugnoy	Versailles	360	—	—	360
	6	Nœux-les-Mines	Etaples	368	—	—	368
	12	Chocques	Rouen	219	—	—	219
	14	Chocques	Le Treport	247	—	—	247
	15	Merville	Etaples	348	—	1	349
	16	Lapugnoy	Rouen	238	—	—	238
			Total	2,357	—	1	2,358
Sept. 27	1	Chocques	Boulogne	343	—	—	343
	5	Nœux-les-Mines	Boulogne	538	—	—	538
	7	Chocques	Dannes Camiers	219	—	—	219
	8	Nœux-les-Mines	Dannes Camiers ..	360	—	—	360
	10	Lapugnoy	Le Treport	385	—	—	385
	11	Lillers	Dannes Camiers	303	—	—	303
	12	Lapugnoy	Le Treport	275	—	—	275
	17	Lapugnoy	Le Treport	244	—	—	244
	18	Nœux-les-Mines	Rouen	378	—	10	388
	24	Nœux-les-Mines	Etaples	451	—	—	451
			Total	3,496	—	10	3,506
Sept. 28	1	Merville and St. Venant..	Boulogne	12	490	—	502
	4	Lillers	Le Treport	441	—	—	441
	7	Lillers	Dannes Camiers ..	375	—	—	375
	9	Lapugnoy	Le Treport	320	—	—	320
	10	Lapugnoy	Le Treport	374	—	—	374
	15	Lapugnoy	Etaples	375	—	—	375
	16	Lapugnoy	Le Treport	308	—	—	308
	17	Chocques	Rouen	267	—	—	267
	22	Nœux-les-Mines	Boulogne	428	—	1	429
			Total	2,900	490	1	3,391

Date. 1915.	A.T. No.	Loaded at	Detrained at	Patients carried. Sick and wounded. British.	Indian.	P. of W.	Total.
Sept. 29	1	Merville	Boulogne	362	—	—	362
	2	Chocques and Lillers ..	Etaples	335	—	17	352
	3	Lillers	Dannes Camiers	191	—	—	191
	4	Lillers	Boulogne	242	—	4	246
	7	Merville and St. Venant..	Boulogne	455	—	—	455
	8	Merville	Boulogne	339	—	—	339
	11	Bethune	Dannes Camiers	225	—	9	234
	12	Chocques	Etaples	220	—	—	220
	14	Lapugnoy	Rouen	292	—	38	330
	21	Bethune	Rouen	438	—	—	438
			Total	3,099	—	68	3,167
Sept. 30	6	Bethune	Le Treport	307	—	—	307
	8	Lapugnoy	Dannes Camiers	321	—	—	321
	10	Chocques and Lapugnoy..	Le Treport	294	—	23	317
	15	Bethune	Le Treport	333	—	9	342
	24	Lillers	Etaples	465	—	—	465
			Total	1,720	—	32	1,752
Oct. 1	9	Lapugnoy	Rouen	156	—	—	156
	12	Chocques and St. Venant	Boulogne	229	—	—	229
	14	Lillers	Rouen	290	—	—	290
			Total	675	—	—	675
Oct. 2	17	Lapugnoy	Etaples	388	—	—	388
	21	Chocques and Lillers ..	Rouen	467	—	—	467
			Total	855	—	—	855
Oct. 3	10	Chocques and Bethune ..	Versailles	363	—	1	364
	18	Lillers	Rouen	404	—	—	404
			Total	767	—	1	768
Oct. 4	3	St. Venant, Merville and Aire.	Boulogne	211	116	20	347
	6	Lapugnoy, Lillers and Chocques.	Le Havre	463	—	—	463
			Total	674	116	20	810
Oct. 5	9	Lapugnoy, Merville and Lillers.	Dannes Camiers	339	—	7	346
	24	Bethune and Chocques ..	Etaples	408	—	—	408
			Total	747	—	7	754
Oct. 6	21	Lillers	Le Treport	388	—	—	388
Oct. 7	10	Lillers	Rouen	480	—	—	480
	17	Lapugnoy, Chocques and Bethune.	Le Havre	292	—	22	314
			Total	772	—	22	794
Oct. 8	15	Chocques, Lillers and Merville.	Boulogne	247	91	—	338
Oct. 9	5	Lapugnoy and Lillers ..	Etretat	461	—	—	461
	18	Merville, St. Venant and Lillers.	Rouen	465	—	—	465
			Total	926	—	—	926
			Grand Total	20,935	1,293	162	22,390

The number of casualties in the medical services was high. Eight officers of the R.A M.C. were killed, 18 were wounded, 1 gassed and 1 missing ; 16 other ranks R.A.M.C. were killed, 68 wounded and 9 gassed. Also one A.S.C. driver of a motor ambulance car was killed.

The number of ambulance trains employed in evacuating the wounded is shown in the preceding table. In addition to these, improvised trains with accommodation for 1,200 sitting cases ran from Nœux-les-Mines, Bethune and Lillers, and, as already noted, a number of the wounded were taken by motor ambulance convoys to St. Omer and a few by barges.

APPENDIX A.

EXTENDED SCALE OF EQUIPMENT FOR CASUALTY CLEARING STATIONS IN FRANCE.

Memorandum issued by the Quartermaster-General at General Headquarters on 17th September, 1917.

1. In view of the recent heavy demands for the issue to casualty clearing stations of equipment in excess of the authorized scale, it has been found necessary to consider the whole question of the functions which a casualty clearing station is now required to perform, and of the scale of equipment necessary for the purpose.

2. The decisions arrived at are as follows :—

(*a*) That although the functions of a casualty clearing station are still unchanged, *i.e.*,

(i) To provide hospital accommodation, nursing and treatment for patients unfit for further transport, *i.e.*, the hospital section ;

(ii) To provide temporary surgical treatment, shelter and food for patients pending transfer to the Base, *i.e.*, the evacuation section ;

(iii) To retain slighter cases of sickness and wounds pending return to duty or transfer to Rest Stations, *i.e.*, the convalescent section ;

the standard of accommodation and comfort which it is necessary to maintain has increased.

(*b*) That the scale of equipment should be such as will provide for :—

(i) A Hospital Section—the standard being that of a General Hospital equipped with 200 beds ;

(ii) Evacuation and Convalescent Section—the standard of equipment being based on the original Casualty Clearing Station, but allowing for 800 patients on stretchers or palliasses ;

(*c*) That each Casualty Clearing Station shall be so organized that it is capable of moving forward at any time as a Casualty Clearing Station with accommodation for 200 wounded on the old scale, in order to form a nucleus pending the establishment of the bulk of the Casualty Clearing Station gradually on the new site.

3. In accordance with (*b*) above, the attached Scale of Equipment has been drawn up for future guidance. This represents the maximum amount of equipment considered necessary to equip fully a casualty clearing station, when no accommodation in buildings or huts is available, but it is to be understood that only so much of it as is actually required for the needs of the moment is to be demanded, and that when circumstances change, any equipment which becomes surplus to requirements should be returned to the Base.

4. Equipment already drawn in excess of the above scale for casualty clearing stations engaged in the present operations may be retained until such operations are over, but no demands for replacements of any articles in excess of the new scale can be entertained unless put forward through the D.G.M.S., *vide* paragraph 6 below.

5. In all future indents, the scale of each article as now authorized and the number actually in possession must be shown.

6. As it is considered that the new scale will meet all necessary requirements, it has been decided that G.R.O. 1198 shall be cancelled. If exceptional circumstances should render it necessary to provide any special stores in excess of scale, either for casualty clearing stations or field ambulances, application should be made to the D.G.M.S., General Headquarters.

7. It is to be understood that the decision in 6 above covers stores for rest stations since these should be supplied from the equipment of field ambulances (F.S. Regulations, Part II., Section 89 (5)), and that, consequently, if any stores required cannot be found from the field ambulances, the application must be sent to D.G.M.S. An exception may be made in the case of tents, and, in cases in which the bell tents issued to field ambulances are not considered suitable for main dressing stations, Marquees S.S. up to a maximum of 48 per Corps may be demanded without further authority.

8. A General Routine Order on the subject is about to be published, but in the meantime, I shall be glad if you will issue instructions on the lines given above.

Modified Scale of Equipment for Casualty Clearing Station.

	800 Patients Enlarged C.C.S. Portion.	200 Patients General Hospital Portion.	Total C.C.S.
Axes, hand, Mk. II	4	—	4
Boxes, lantern, distinguishing, double	—	—	2
,, stationery, field	—	12	12
Buckets, water, G.S., canvas	24	—	24
Flags, distinguishing, H.P.	—	—	2
,, ,, crossbars	—	—	2
,, ,, poles	—	—	2
Forms, dining tent	68	32	100
Hooks, bill	5	5	10
,, reaping, small	8	—	8
Kettles, camp, oval, 12-quarts	24	—	24
Lanterns, distinguishing, white	—	—	4
,, tent, folding	—	—	2
Sheets, ground	800	—	800
Stools, camp	16	32	48
Stoves, Soyers	8	4	12
Tables, camp	8	8	16
,, portable F.S.	40	28	68
Tents, complete—marquee H.P.S.	60	20	80
,, C.S.L. } For use of staff	—	—	35
,, C.D.L. } For use of staff	—	—	15
,, store*	—	—	1
,, marquee, small double*	—	—	1
Axes, pick	16	5	21
Shovels, G.S.	16	9	25
Baskets, bottle, hand	16	—	16
Boards, bedhead	—	212	212
,, knife	—	—	6
Boxes, salt, 7 lb.	2	—	2
Bottles, water, table, 1-quart	—	8	8
,, ,, toilet	—	2	2
Brooms, bass	16	8	24
Brushes, bedpan	—	20	20
,, feeders	30	30	60
,, scrubbing, hand	8	20	28
,, stencil	2	1	3
,, sweeping, long	—	20	20
,, washing	24	—	24
,, whitewash, hair, 6-oz.	12	—	12

* These items were added at a later date.

Modified Scale of Equipment for Casualty Clearing Station.

	800 Patients Enlarged C.C.S. Portion.	200 Patients General Hospital Portion.	Total C.C.S.
Chairs, arm, H.P., folding	—	32	32
,, officers, folding, F.A.	—	32	32
Clothes horses	—	1	1
Cups, tea, earthen	—	9	9
Feeders, earthen	—	40	40
Glasses, looking	—	12	12
Inhalers	4	—	4
Lamps, F.S.	160	40	200
,, glasses (spare)	16	4	20
,, operating, F.A.	8	1	9
,, hand, acetylene	40	—	40
,, operating, acetylene, large ..	12	—	12
Measures, glass, 4-oz.	—	20	20
,, ,, 2-oz.	—	40	40
Mops, common	—	2	2
Pins, rolling	—	1	1
Refrigerators	—	1	1
Safes, bread	—	1	1
,, meat	—	1	1
Saucers, tea, earthen	—	9	9
Screens, bedside	—	8	8
Sponges, bath	32	4	36
Squeezers, lemon	8	1	9
Strainers, hair, 15-inch	—	1	1
Tables, bedside	—	208	208
Trays, bed	—	28	28
,, dinner	—	16	16
Tumblers, half-pint	—	40	40
,, toilet	—	2	2
,, wine	—	10	10
Urinals, glass (or earthen)	—	20	20
Washhand stands, H.P.	—	1	1
Portable clarifier and steriliser	1	—	1
Slates, plain	—	1	1
Balances, spring, 200 lb.	1	—	1
,, ,, 30 lb.	2	—	2
Basins, enamelled, 14-inch	80	40	120
,, ,, 7¼-inch	80	58	138
,, ,, 6-inch	800	212	1,012
,, washing, zinc, 11-inch	160	—	160
Baths, arm	8	4	12
,, foot	—	10	10
,, long, open	—	2	2
Bells, hand, press	—	1	1
Boilers, tea or coffee	—	2	2
,, water, tin	8	4	12
Bowls, shaving	—	4	4
Boxes, dressing	16	8	24
Cans, 3-gall.	8	20	28
,, oil, feeding, ½-pint	4	—	4
,, ,, 5½-pints	4	—	4

Modified Scale of Equipment for Casualty Clearing Station.

	800 Patients Enlarged C.C.S. Portion.	200 Patients General Hospital Portion.	Total C.C.S.
Cans, oil, 9-pints	2	—	2
Carts, hand, slop	—	2	2
Castors, pepper, enamelled	—	20	20
Clippers, hair	4	8	12
Colanders, tin, 10½-inch	—	2	2
Corkscrews	20	—	20
Covers, tin, 6¼-inch	100	—	100
Cradles, fracture	—	8	8
Cups, egg, enamelled	—	60	60
,, canteen, drinking, 1-pint	200	—	200
,, spitting, enamelled	60	40	100
Dishes, meat, tin, 17½-inch	—	2	2
Dredgers, flour	—	1	1
Forks, carving	—	2	2
,, flesh	4	—	4
,, table, large	—	16	16
,, toasting	—	2	2
Feeders, enamelled	120	—	120
Funnels, tin, ½-pint	1	1	2
Graters, bread	—	1	1
Gridirons, fluted	—	1	1
Implements, butcher's, cases, wood, filled	2	1	3
Jugs, enamelled, F.A., 2-quart	16	1	17
,, ,, ,, 1-quart	—	1	1
Kettles, tea, 2-quart	—	20	20
,, cooking	32	—	32
Knives, bread	—	1	1
,, carving	—	2	2
,, opening tins	20	—	20
,, table, large	—	16	16
Ladles, cooks, F.A.	8	2	10
,, soup	—	1	1
Machines, mincing, large	4	—	4
Measures, milk	—	1	1
,, tin, ½-gallon	—	1	1
,, ,, 1-quart	—	1	1
,, ,, 1-pint	—	1	1
,, ,, ½-pint	—	1	1
,, wine and spirit, 1-quart	—	1	1
,, ,, ,, 1-pint	—	1	1
,, ,, ,, ½-pint	—	1	1
,, ,, ,, 1-gill	—	1	1
,, ,, ,, ½-gill	—	1	1
Pails, slop	—	20	20
,, I.G.	32	20	52
Panniers, G.S.	64	—	64
Pannikins, 1-pint	—	200	200
Pans, bed, enamelled	32	20	52
,, frying, 9-inch, enamelled	—	8	8
Picks, ice	2	—	2
Plates, dinner, enamelled	800	229	1,029

Modified Scale of Equipment for Casualty Clearing Station.

	800 Patients Enlarged C.C.S. Portion.	200 Patients General Hospital Portion.	Total C.C.S.
Pots, chamber, enamelled	—	32	32
,, mustard, enamelled	—	16	16
,, tea, enamelled	4	12	16
Salt cellars, iron	—	32	32
Saucepans, F.A., nests	4	—	4
Saws, butcher's, bow, 20-inch	—	1	1
Scissors, haircutting	16	16	32
,, lamp	2	—	2
,, nail	10	—	10
Scoops, hand, flour	4	—	4
Shapes, pudding	24	40	64
Skewers	6	—	6
,, (12 to a set), sets	4	—	4
Spittoons	—	16	16
Spoons, e.p., dessert	—	16	16
,, ,, egg	—	3	3
,, ,, tea	—	8	8
,, gravy	—	2	2
,, n.s., mustard, large	—	16	16
,, ,, salt, large	—	32	32
,, ,, tea	—	16	16
Stands, cruet, large	—	1	1
Stools, close, F.A., nests of 8	4	9	13
Stoves, Primus	20	4	24
,, portable	4	4	8
Strainers, gravy, round	—	1	1
Trays, diet	—	16	16
,, soap, enamelled	—	26	26
Tubs, ablution	—	4	4
,, washing, 8-gallon, iron	—	6	6
Urinals, zinc	128	—	128
Warmers, food, spirit lamp	—	5	5
Whisks, egg	—	1	1
Disinfectors, Thresh	1	—	1
Blankets, G.S.	1,600	600	2,200
Bolsters, hospital	—	224	224
Cases, bolster, barrack coir	800	12	812
,, palliasse	800	12	812
,, slip, bolster, hospital	—	260	260
,, ,, mattress ,,	—	312	312
,, ,, pillow, large	—	617	617
,, ,, ,, small	—	40	40
Counterpanes, hospital	—	232	232
Mattresses, hospital	—	224	224
Pillows, hospital, feather	200	208	408
,, ,, hair, large	—	224	224
,, ,, ,, small	—	12	12
Sheets	1,920	1,200	3,120
Bedsteads, folding, Mk. II.	—	208	208
Mattresses, spring	—	208	208
Cloths, bedpan covering	—	40	40

Modified Scale of Equipment for Casualty Clearing Station.

	800 Patients Enlarged C.C.S. Portion.	200 Patients General Hospital Portion.	Total C.C.S.
Cloths, distinctive	—	80	80
,, medicine	—	80	80
,, table	—	80	80
,, tea	400	80	480
Dusters	—	80	80
Flags, union	—	—	2
Napkins, ophthalmia	—	40	40
,, table	—	24	24
Flannel, white, yards	48	—	48
Nets, potato	—	10	10
Netting, mosquito, yards	—	30	30
Stretchers, ambulance	840	8	848
Tapes, chest-measuring	8	—	8
Tow, carbolized, pounds	240	—	240
Towels, bath	—	12	12
,, hand, hospital	1,600	800	2,400
,, operating	320	16	336
,, round	—	120	120
,, Turkish	—	300	300
Wringers, fomentation	—	16	16
Straps, securing, 1-inch by 84-inch	28	—	28
Carriages, ambulance, stretcher	16	4	20
Bicycles	4	—	4
Waistcoats, cardigan	200	40	240
Trousers, duck, universal, pairs	—	6	6
Aprons, cook's, dowlas	18	6	24
,, operating	40	16	56
Frocks, dowlas	—	6	6
Coats, great, drab, mixture, D.M.	100	40	140
Slippers, leather, pairs	50	228	278
Gowns, serge, lined	—	249	249
Handkerchiefs	800	624	1,424
Jackets, sleeping	400	40	440
Neckerchiefs	—	312	312
Trousers, serge, lined	—	312	312
,, pyjama, sleeping	1,200	40	1,240
Waistcoats, serge, lined	—	240	240
Buttons, bone, white, large, gross	12	2	14
,, zinc, large, gross	12	2	14
,, ,, small ,,	12	2	14
Needles, darning	100	—	100
,, sewing, assorted	100	—	100
Cotton, white, mercerized, No. 18, reels	50	—	50
Worsted, blue-grey, pounds	4	—	4
Bags, tool, shoemaker's, filled	—	—	2
Brushes, shaving	8	16	24
Combs, hair	64	16	80
Drawers, flannel	—	312	312
Dressings, field	98	—	98
Forks	800	208	1,008
Knives, table	800	208	1,008

Modified Scale of Equipment for Casualty Clearing Station.

	800 Patients Enlarged C.C.S. Portion.	200 Patients General Hospital Portion.	Total C.C.S.
Razors	8	—	8
Shirts, cotton, made	—	561	561
,, ,, for helpless patients ..	—	62	62
,, flannel, white, ordinary, made ..	900	312	1,212
,, ,, ,, for helpless patients	300	104	404
Socks, worsted	1,600	624	2,224
Spoons	800	212	1,012
Strops, razor	8	—	8
Aprons, operating, waterproof	144	—	144

APPENDIX B.

Instructions for Equipping Supply Trains as Improvised Ambulance Trains in First Army.

1. At each of the following places equipments for fitting out twenty vans and a cook's van in each of three empty supply trains are being obtained and kept ready :—

Chocques ..	No. 1 Casualty Clearing Station.
Lillers ..	No. 4 Casualty Clearing Station.
Merville ..	D.D.M.S., IVth Corps.

2. In addition to the equipments kept ready there, the attached list of articles will be obtained locally as required ; but the articles for one of the three empty supply trains should be ready with the equipments.

3. When orders are issued for the use of a supply train, the officers in charge of the units referred to above will provide the personnel R.A.M.C. and obtain the convalescents from convalescents attached to their units for light duties, or at Chocques through the D.D.M.S., Ist Corps, and at Lillers from Town Major. Should it be impossible to obtain the necessary number of convalescents, they will arrange to send down in each van a patient who is sufficiently well to look after the others in the van, from the casualty clearing station which evacuates sick and wounded by the train.

4. At Merville these arrangements will be made by the D.D.M.S., IVth Corps, who will obtain the R.A.M.C. personnel from No. 6 Casualty Clearing Station.

5. The medical officer in charge of the train will be responsible at the end of the journey for collecting the equipment and returning with it and with the personnel to his original starting point. Officers in charge of the arrangements for the supply trains and entraining duties will see that he thoroughly understands these instructions, and will provide him with the necessary orders to take with him, with a view to his returning with personnel and equipments.

6. Whenever an empty supply train leaves with sick and wounded as above, the O.C. No. 1 Casualty Clearing Station, Chocques, O.C. No. 4 Casualty Clearing Station, Lillers, or D.D.M.S., IVth Corps (as the case may be), will at once wire the D.A.D.M.S., G.H.Q. Report Centre, repeating to the D.M.S., First Army, giving the number of sick and wounded on the train, the hour of departure and station, destination (if known), and designation

of train. No wire will be sent from any other officer with regard to this, as it is essential that only one wire should reach the D.A.D.M.S., Report Centre, when a train leaves with sick and wounded. Otherwise, confusion is apt to arise as to the number of trains so departing.

H.Q., First Army.
8th May 1915.

Surgeon-General,
D.M.S., First Army.

Copies to :—
D.Ds.M.S.
O.C., Nos. 1, 4 and 6 C.C.Ss.
D.A.D.M.S., G.H.Q.

Equipment for fitting out Nine Empty Supply Trains for Conveyance of Sick and Wounded.

(To be kept at Chocques, Lillers and Merville.)

Articles.	For each Covered Van.	Total for each Train (20 vans)	Total for each Railhead (3 trains)	Total for 3 Railheads (3 trains at each)
Palliasses	10	200	600	1,800
Pillow cases	10	200	600	1,800
Blankets, G.S.	10	200	600	1,800
Tables, camp, folding	1	20	60	180
Stools, ,, ,,	1	20	60	180
Stools, close	1	5	15	45
Bedpans, enamel	1	20	60	180
Urinals, zinc	2	40	120	360
Boilers, tea	1	20	60	180
Feeders, enamel	2	40	120	360
Mugs, drinking, enamel	10	200	600	1,800
Plates, soup, enamel	10	200	600	1,800
Knives, table	10	200	600	1,800
Forks, ,,	10	200	600	1,800
Spoons, ,,	10	200	600	1,800
Lamps, hurricane	1	20	60	180
Jugs, enamel (2 quarts)	2	40	120	360
	For each Kitchen Van.	One Kitchen Van per Train.		
Soyer's stoves	2	2	6	18
Cans, soup (3 gallons)	4	4	12	36
Ladles, cooks'	4	4	12	36
Tin openers	4	4	12	36
Tanks, water (20 gallons)	1	1	3	9

Articles to be obtained locally for each train, as required.

Rations for two days for 225 men.
Toilet paper for two days for 225 men.
One medical comfort pannier.
Cresol for night stools.
Fuel for Soyer's stoves.
Straw (12 lb. per palliasse).

Medical and Surgical Supplies.
To be drawn from Advanced Depôts of Medical Stores.

One medical companion and water bottle.
Two surgical haversacks and water bottles.
Two reserve dressing boxes.
Assorted splints, two sets.
One bottle of assorted drainage tubing.
Biniodide of mercury soloids 100.

Personnel.

One medical officer.
One N.C.O. and four men (including one cook), R.A.M.C.
Twenty convalescents (one per van).

Articles for cleaning empty vans.

To be purchased locally out of imprest, or obtained from local Ordnance or Supply Officers :—

Brooms
Cresol
Buckets
} as required.

APPENDIX C.

Measures taken for dealing with the Epidemic of Enteric Fever amongst the Civilian Population in Flanders, 1915.

The prevalence of enteric fever was one of the salient features of the medical situation at the beginning of January 1915. The concentration of large numbers of men in a limited area, and the fact that many units were arriving in France without an adequate anti-typhoid inoculation, led the medical authorities to expect a considerable incidence of enteric fever amongst the troops. Further, the French, Belgians and Germans appeared also to be suffering very seriously and to a much greater extent than the British. Towards the end of January 1915 measures were initiated for the removal of civil enteric cases in the area around Poperinghe and Ypres, which was then occupied by French troops, but which the 28th Division was about to take over from them. There was a very large number of enteric cases in the 8th French Army in that area at the time, the cases under treatment being estimated as not much under 5,000. This number was considered to be an over-statement, but there was no doubt that a very serious outbreak had occurred amongst the French troops. At that time a British voluntary ambulance from the Society of Friends was at Dunkirk and was preparing a hospital for the French military enteric cases there. As it was not, however, considered possible for the Society of Friends to deal with the numbers that the British authorities might require to accommodate, the British Red Cross Society's Commissioner at Boulogne was approached and asked if he could undertake the treatment of some thousand civilian enteric cases of all ages and both sexes whom it was proposed to remove from the area referred to above, in order to eliminate sources of infection as far as possible from amongst the units of the 28th Division when the area was taken over by it. The British Red Cross Society undertook to find the staff on the understanding that all the expenses would be met by the Government. After further negotiations with the Belgian Government and the French Military Mission at G.H.Q. it was decided to open a hospital at the monastery at Malassise, near

St. Omer. The convent at Wisques, also in the St. Omer area, had been originally proposed for the purpose, but the Malassise monastery proved more suitable, although the convent at Wisques was earmarked as a second hospital if it should be required. At that time it was ascertained that the number of enteric cases under treatment in the proposed area of the 28th Division amongst the Belgian inhabitants was 144 cases in Poperinghe, 200 cases in and around Ypres, and about 400 cases in and around Vlamertinghe, St. Jean and Woesten. Lieut.-Colonel Guise Moores was then ordered, on the 31st January, to organise a hospital on lines similar to that of a general hospital for 520 beds, but modified according to circumstances. Ordnance equipment was obtained from Boulogne from ordnance stores supplemented by equipment from Red Cross stores and from the Belgian Government. The Red Cross Society's personnel was obtained from the various Red Cross Society units in France, and fifteen Belgian orderlies who spoke French and Flemish were added to the establishment. The nurses and medical officers arrived at Malassise on the 5th February, but the orderlies and two Belgian doctors did not arrive until later. The next step that had to be taken was the removal of the cases of enteric amongst the Belgian population to Malassise, and Mr. Robert Bacon, of the United States of America, became an active agent in effecting this. He visited Dunkirk and La Panne on the 11th February in order to consult the Belgian Government authorities with regard to the removal of the civilians from the Ypres and Poperinghe areas and arrange with the Governor of Western Flanders to issue instructions to the Burgomasters to have reports sent to the D.M.S. of the 2nd Army of all cases fit to be moved. No. 1 Motor Ambulance Convoy at G.H.Q. was employed in transferring the cases to Malassise. The Society of Friends, which had commenced work at Dunkirk, had got in touch with the 8th French Army, and, at its request, established seven posts in the zone of that army with Woesten as their headquarters, originally with the object of evacuating sick and wounded of the French Army formations. The personnel of the Society had been provided with French passes, and during their work with the French Army had got in touch not only with the French troops, but also with the Belgian civilian sick and wounded. In order to assist the latter, the Society of Friends took over the Ypres Asylum with the sanction of the Belgian civil authorities, and was at work there during February. The post which the Society had at their headquarters at Woesten and which had been established both for French soldiers and Belgian civilians was closed towards the end of January by order of the French, as the premises occupied by it were wanted for billeting purposes. Consequently, permission to transfer the post to the Château Elizabeth at Poperinghe was obtained, and the Belgian sick were brought to it from Woesten on the 20th January. The Society of Friends, with its two hospitals at the Asylum at Ypres and Château Elizabeth at Poperinghe, thus became a kind of clearing hospital for the evacuation of the civilian enteric cases to Malassise when the latter was opened.

At the same time a house-to-house inspection of the houses occupied by civilians in the British zone was initiated, and by the evening of the 24th February, 347 houses had been visited, in twenty-six of which cases of enteric fever were found. Twenty-four of these had been removed to hospital. The house-to-house inspection was continued by Mr. Alan Baker, of the British Society of Friends, and 3,000 civilians had been inoculated against enteric fever by the personnel of the Society by the 24th February under the supervision of Captain Myer Coplans, the D.A.D.M.S. for Sanitation, 2nd Army Headquarters.

Arrangements were made for accommodating the convalescents from the Malassise Hospital at Montreuil, Dieppe, St. Valery, and Yvetot, under arrangements with the French medical authorities.

Inoculation of Belgian civilians was made obligatory by the following order issued by the Belgian authorities on the 28th February 1915 in the whole zone occupied by the Allied and Belgian troops.

"*KINGDOM OF BELGIUM.*

"ORDER.

"In view of the fact that we are at War and of the necessity for taking measures in order to guarantee the health of the civil population and of the Army. Reference Standing Order of the 13th February 1915 :—

"(1) Anti-typhoid vaccination is obligatory for the civil population in the whole zone occupied by the Allied and National troops. Doctors are charged to assure the free vaccination of the population ; they are to give certificates to each vaccinated person. The Parish Administration will set up lists on which will be written the names of the people of the Parish who have been vaccinated.

"(2) The inhabitants of the region indicated in (1) who refuse to be vaccinated may be expelled from the zone of the Armies and treated as refugees.

"(3) Only those will be excused from anti-typhoid vaccination for whom the doctor in charge of vaccination recognises a contrary indication. A certificate will be issued to them.

"(4) Each doctor notified of the existence of a case of typhoid fever is bound to notify to the Parish Administration the locality in which the case is stated, and to the Inspector of Sanitation and Health, the following day after the verification at the latest. The doctor who refrains knowingly from doing this will be called before a Court of Justice, and can be punished by a fine or 26–100 francs, or imprisonment from one to eight days.

"(5) People infected with typhoid fever can, if the Military Authorities consider it necessary, be transported to special hospitals, where they will be treated free.

"(6) Each time that a case of typhoid fever is notified to them, the Parish Administration will have placed, at the entrance of the house in which the sick person was living, an easily read notice in French and Flemish, indicating the nature of the illness.

"(7) A gratuitous service has been set up for the disinfection of the localities in which typhoid cases have been living. The Parish Administration will inform this service immediately of all cases of typhoid fever which are notified to them. The suspected dwelling and its surroundings will be disinfected as soon as the sick person has been taken away or cured, after which the notice referred to in (6) will be taken away.

"(8) Any person guilty of having removed without authority a notice showing that a house is suspected of infection can be expelled from the zone of the Armies."

These measures proved of the greatest value in limiting the spread of enteric fever in Flanders, and whenever the disease appeared to be prevalent in any areas in France occupied by the British troops, similar measures were undertaken to inoculate the inhabitants against enteric fever.

By the 23rd March 1915 the Society of Friends had inoculated about 10,000 civilians, had visited over 2,600 houses ; disinfected the houses occupied by enteric cases, which, in the majority of cases, were removed to hospital ; and had mapped out a general distribution of the cases. The anti-typhoid inoculations were carried out with the British Army vaccine. The work was carried out in constant danger from shell fire. Thus the asylum at Ypres had been partially destroyed by enemy artillery since it was taken over by the Society of Friends, and the inoculation officer himself wounded while carrying out inoculations.

The French medical authorities reported in April 1915 that the French Army had 69,000 cases of typhoid fever since the commencement of the war ; the French troops to the north of the British zone, whose strength

was less than the British Army in the field, had about 9,000 cases since they occupied the northern area, whereas the British troops had only 1,000 cases since the commencement of the war. The French Army had made anti-typhoid inoculation obligatory, but as the order came into force only in March 1914 the great majority of the French troops were not inoculated on the outbreak of the war.

By July 1915 the percentage of inoculated persons amongst the British force was 90 to 92 per cent.

Up to 12th June 1915 the number of cases reported, including suspects, were 1,115 British and 45 Indian cases of typhoid fever, and 376 British parayphoids and 1 Indian paratyphoid.

Of the case mortality amongst the British, 21·12 per cent. of deaths occurred amongst the uninoculated cases, as against 6·62 per cent. receiving one dose, and 8·75 per cent. receiving two doses.

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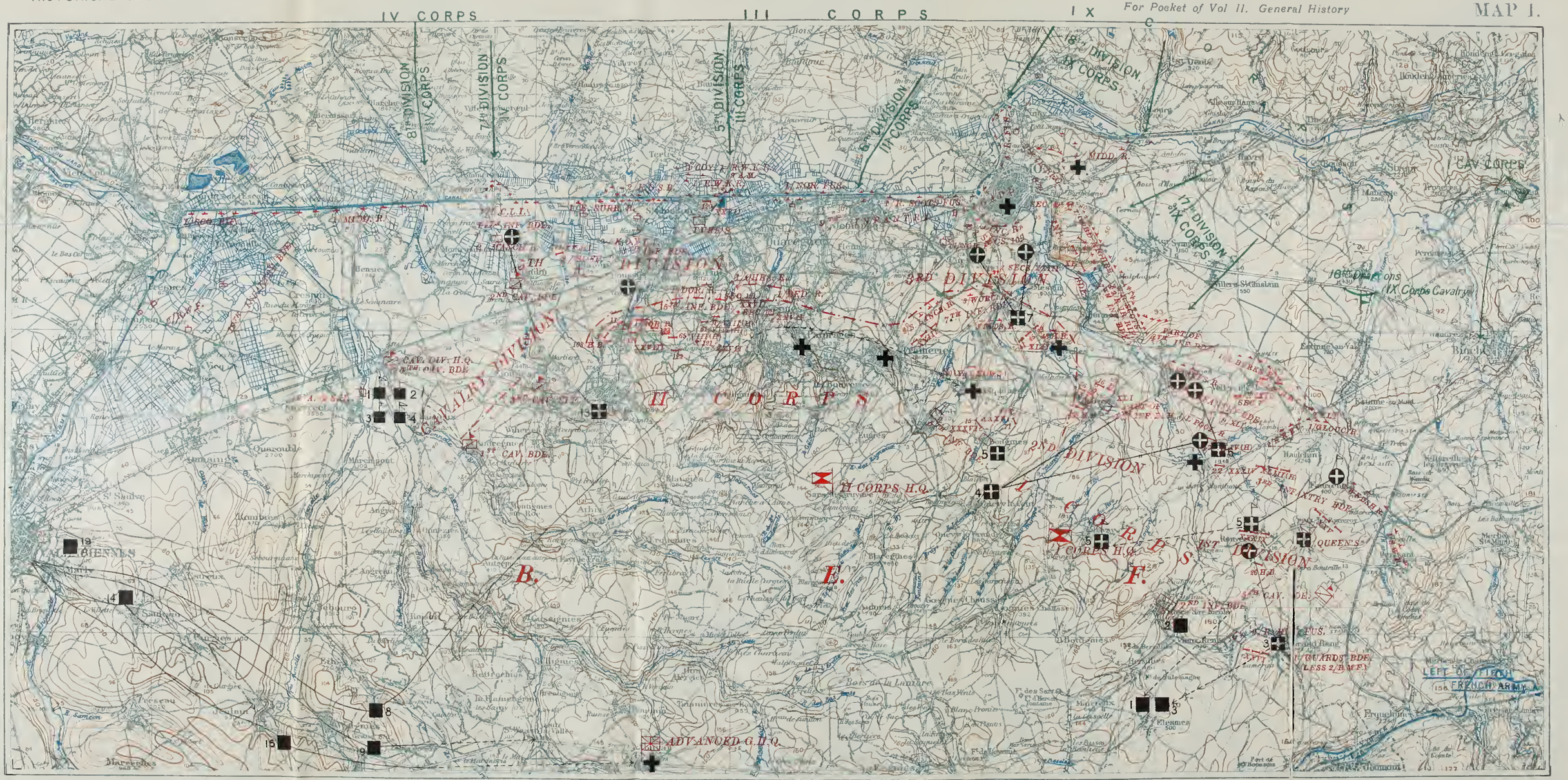
MAP COMPILED BY
HISTORICAL SECTION. (MILITARY BRANCH)

MONS, SUNDAY, 23 AUG., 1914.

(SHOWING POSITION OF MEDICAL UNITS DURING THE BATTLE.)

For Pocket of Vol II. General History

MAP 1.



GERMAN
FRENCH
B.E.F.
APPROXIMATE LINE HELD ON 24TH AUGUST

Scale 1/100,000 or 1 Inch to 1·58 Miles

Mile 1 0 1 2 3 4 5 6 7 8 9 10 Miles

SCALE OF MILES

Ordnance Survey, 1920.

■ = Headquarters of Field Ambulances. With Flag = Cavalry F.A's.
⊕ = Advanced Dressing Stations. With Flag = Cavalry F.A's.
■ = Field Ambulances closed or on the march. With Flag = Cavalry F.A's
✚ = Local Belgian or French Hospitals, where British wounded were left

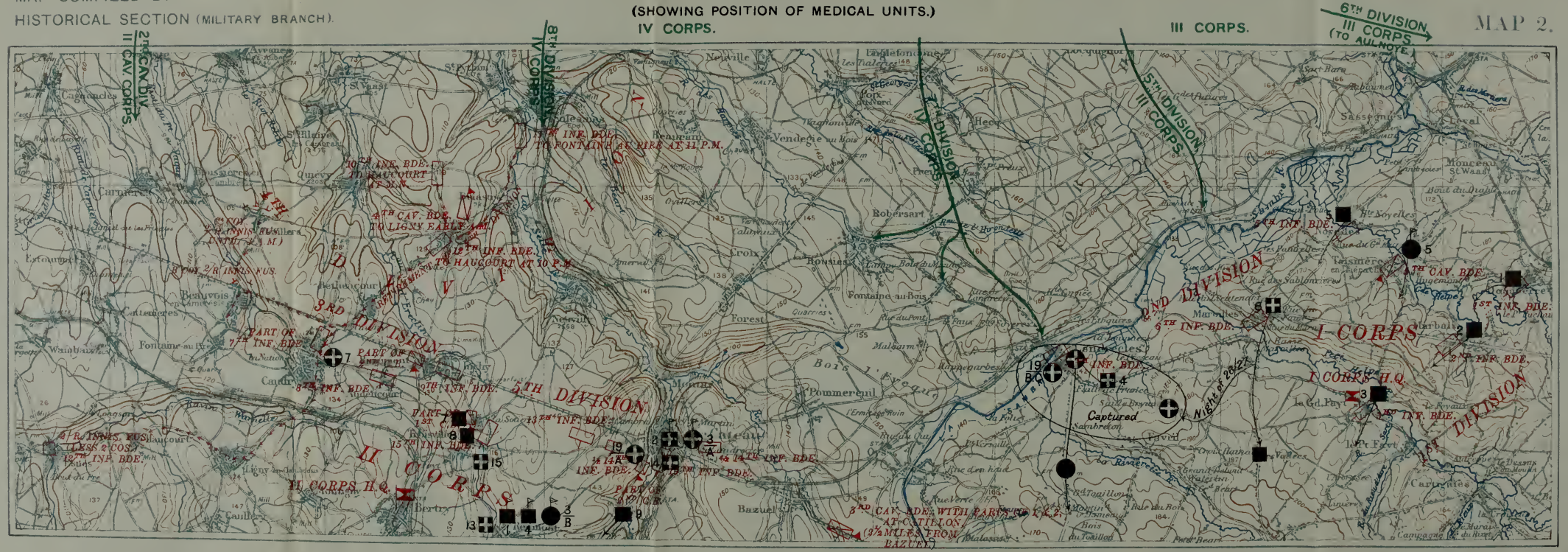
MAP COMPILED BY
HISTORICAL SECTION (MILITARY BRANCH).

SITUATION OF B.E.F., NIGHT 25-26 AUGUST, 1914.

(SHOWING POSITION OF MEDICAL UNITS.)

For Pocket of Vol. II. General History.

MAP 2.


II CAV. DIV. II CAV. CORPS.
IV CORPS.
III CORPS.
6TH DIVISION, III CORPS (TO AULNOYE)
5TH DIVISION III CORPS
4TH DIVISION IV CORPS
2ND DIVISION
1ST DIVISION
3RD DIVISION
5TH DIVISION
I CORPS
I CORPS H.Q.
II CORPS
II CORPS H.Q.
Captured
Night of 25/26
Scale 1/100,000 or 1 inch to 1·58 Miles
SCALE OF MILES
Ordnance Survey, 1920.
= Headquarters of Field Ambulance. With Flag = Cavalry F.A's.
= Detached sections. With Flag = Cavalry F.A's.
= Field Ambulances closed or on the march. With Flag = Cavalry F.A's.

ACTION OF LE CATEAU, 26 AUGUST, 1914.

(SHOWING POSITION OF MEDICAL UNITS DURING THE BATTLE.)

For Pocket of Vol II General History

MAP COMPILED BY HISTORICAL SECTION, MILITARY BRANCH

MAP 3.

ATTACK OF 2ND CAV. DIV. & 22ND RES. DIV. AGAINST THE FRENCH

ATTACK OF IV. RESERVE CORPS

ATTACK OF 7TH RES. DIV. AT 9 P.M.

13TH RES. INF. BDE.

14TH RES. INF. BDE.

HALF OF 2ND CAV. DIV. 4TH JAGERS & 3 CAV. REGTS (UNTIL NOON)

7TH & 10TH JÄGERS OF 2ND & 9TH CAV. DIV.

ATTACK OF IV DIVISION

ATTACK OF 8TH INF. BDE.

ATTACK OF 15TH INF. BDE.

ATTACK OF III CORPS

ATTACK OF 5TH DIV.

ATTACK OF 6TH INF. BDE.

ATTACK OF 14TH INF. BDE.

ATTACK OF 13TH INF. BDE.

ATTACK OF 26TH INF. BDE.

ATTACK OF 27TH INF. BDE.

ATTACK OF 12TH INF. BDE.

ATTACK OF 11TH INF. BDE.

ATTACK OF 7TH INF. BDE.

ATTACK OF 9TH INF. BDE.

ATTACK OF 19TH INF. BDE.

ATTACK OF 3RD DIV.

ATTACK OF 4TH DIV.

ATTACK OF II CORPS

ATTACK OF 36TH FUS. REGT.

ATTACK OF 153RD INF. REGT.

ATTACK OF 3RD GUARD INF. REGT.

ATTACK OF 68TH INF. REGT.

ATTACK OF 2/R.I.R.

ATTACK OF 1/GORDON HIGHLANDERS

ATTACK OF 1/GOC. R.

ATTACK OF 1/LINC. R.

ATTACK OF 1/MIDD. R.

ATTACK OF 1/NOR. R.

ATTACK OF 1/QUEEN'S

ATTACK OF 1/KING'S OWN

ATTACK OF 1/ESSEX R.

ATTACK OF 1/BERKS R.

ATTACK OF 1/R. IR. FUS.

ATTACK OF 1/R. SCOTS

ATTACK OF 1/R. WELSH

ATTACK OF 1/R. MUNSTER FUS.

ATTACK OF 1/R. DUBLIN FUS.

ATTACK OF 1/K.O.S.B.

ATTACK OF 1/CHES. R.

ATTACK OF 1/BED. R.

ATTACK OF 1/L.N. LANCS. R.

ATTACK OF 1/HANTS R.

ATTACK OF 1/L. LAN. FUS.

ATTACK OF 1/R. IR. RIFLES

ATTACK OF 1/ROYAL IR. FUS.

ATTACK OF 1/ROYAL SCOTS

ATTACK OF 1/K.O.S.B.

NORTH WEST EUROPE

MAP 4.

SHEET 1.

SCALE 1:250,000

For Pocket of Vol. II. General History.

Geographical Section, General Staff No 2733

REFERENCE

Railways (double with Station
" (single)
narrow gauge or Tramway
Roads main, with Trameay
secondary
minor
International Boundaries
Churches
Forts
Heights in metres
Contour interval 50 metres
Woods in green. Orchards are not shown.
The map is divided into 2 inch squares

Scale 1 Inch to 3·95 Miles
or 1 cm Inches to 4 Miles.

Miles 10 9 8 7 6 5 4 3 2 1 0 5 10 15 20 25 30 Miles

Kilometres 10 9 8 7 6 5 4 3 2 1 0 5 10 15 20 25 30 35 40 45 50 Kilometres

1 Centimetre to 2·5 Kilometres

War Office, Aug. 1914.

NORTH WEST EUROPE

SCALE 1:250,000

For Pocket of Vol. II. General History.

MAP 5.

SHEET 4.

Geographical Section, General Staff No 2733

War Office, Feb., 1915. Revised Edition.

REFERENCE

Railways (double) with Stations
" (single) "
narrow gauge or Tramway
Roads main, with Tramway alongside or crossing
secondary
minor
International Boundaries
Thirteens
Forts
Heights in metres
Contour interval 50 metres
Woods in green. Orchards are not shown.
The map is divided into 2 inch squares

Scale 1 Inch to 3·95 Miles
or 1·01 Inches to 4 Miles.

Miles 10 9 8 7 6 5 4 3 2 1 0 5 10 15 20 25 30 Miles

Kilometres 10 9 8 7 6 5 4 3 2 1 0 5 10 15 20 25 30 35 40 45 50 Kilometres

1 Centimetre to 2·5 Kilometres

INDEX TO ADJOINING SHEETS

1 2
3 4 5

FRANCE

MAP 6.

SCALE 1:250,000

For Pocket of Vol. II. General History.

SHEET 10

Geographical Section, General Staff, No. 2738

Prepared and Printed at the Ordnance Survey Office, Southampton, 1914.

REFERENCE

Railways (double) with Station
(single)
narrow gauge or Tramway
Roads main (Route Nationale)
secondary (Route Departmentale)
minor — Poor or Mule.
Rivers
Canals navigable
irrigation
Heights in metres
Woods are shown in green

Scale 1 Inch to 3·95 Miles
or 1 cm. Inches to 4 Miles

Miles 10 9 8 7 6 5 4 3 2 1 0 5 10 15 20 25 30 Miles

Kilometres 10 9 8 7 6 5 4 3 2 1 0 5 10 15 20 25 30 35 40 45 50 Kilometres

1 Centimetre to 2·5 Kilometres

Contours are at 40 Metre Intervals
The map is divided into 2 Inch Squares

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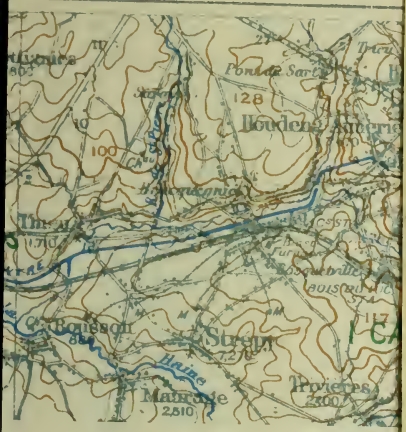

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258
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Macpherson, (Sir) William G
(ed.)
Medical services

~~Physical & Applied Sci~~

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